

**WYOMING OCCUPATIONAL HEALTH AND SAFETY RULES AND
REGULATIONS
FOR
OIL AND GAS WELL DRILLING

CHAPTER 1

GENERAL**

Section 1. Authority, Purpose and Scope.

(a) The Occupational Health and Safety Commission is empowered by 27-11-105, *Wyoming Statutes*, to devise, formulate, adopt, amend and repeal rules and regulations governing the health and safety of employees and employers covered by the Act.

(b) The purpose and scope of these rules and regulations are:

(i) To provide standards and rules and regulations to safeguard the life, limb and health of employees and employers in the Oil and Gas Well Drilling Industry.

(ii) To provide the minimum requirements for compliance by each place of employment in the Oil and Gas Well Drilling Industry.

Section 2. Definitions.

(a) As used in these rules and regulations, unless the context clearly requires otherwise:

(i) "Act" means State of Wyoming Occupational Health and Safety Act, as amended 1992.

(ii) "Administrator" means the Administrator of the ~~Workers= Safety and Compensation Division.~~ Wyoming Workers' Safety – OSHA.

(iii) "ANSI" means American National Standards Institute

(iv) "Approved" means sanctioned, endorsed, accredited, certified, or accepted by a duly constituted and recognized authority or agency.

(vi) "ASME" means American Society of Mechanical Engineers.

(v) "ASTM" means American Society for Testing and Materials.

(vii) "Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

(viii) "CBMNG" Means Coal Bed Methane Natural Gas.

~~(viii)~~ (ix) "Combustible liquid" means any liquid having a flashpoint at or above 100°F. (37.8°C.). (See definition of "Flashpoint"—~~(a) (xxiv) of this Section.~~) Combustible liquids shall be divided into two classes as follows:

(A) "Class II liquids" shall include those with flashpoints at or above 100°F. (37.8°C.) and below 140°F. (60°C.) except any mixture having components with flashpoints of 200°F. (93.3°C.) or higher, the volume of which make up ninety-nine (99) percent or more of the total volume of the mixture. Example: Stoddard Solvent; No.2 Fuel Oil.

(B) "Class III liquids" shall include those with flashpoints at or above 140°F. (60°C.). Class III liquids are subdivided into two sub-classes:

(I) "Class IIIA liquids" shall include those with flashpoints at or above 140°F. (60°C.) and below 200°F. (93.3°C.), except any mixture having components with flashpoints of 200°F. (93.3°C.), or higher, the total volume of which make up ninety-nine (99) percent or more of the total volume of the mixture. Example: Fuel Oil No. 6.

(II) "Class IIIB liquids" shall include those with flashpoints at or above 200°F. (93.3°C.). Example: Ethylene Glycol.

(C) When a combustible liquid is heated for use to within 30°F. (16.7°C.) of its flashpoint, it shall be handled in accordance with the requirements for the next lower class of liquids.

~~(ix)~~ (x) "Commission" means the State of Wyoming Occupational Health and Safety Commission.

~~(x)~~ (xi) "Competent Person" means one who is capable of identifying existing and predictable hazards in the surrounding or working conditions which are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt corrective measures to eliminate them or who can recommend directly to persons in authority that such corrective measures be taken.

~~(xii)~~ (xii) "Contractor" means any person and/or employer (see definition of "person" and/or "employer") who contracts all or any part of oil and gas well drilling.

~~(xii)~~ (xiii) "Sub-Contractor" means any person and/or employer (see definition of "person" and/or "employer") who contracts to perform any part of oil and gas well drilling from contractor.

~~(xiii)~~ (xiv) "Defect" means any characteristic or condition which tends to weaken or reduce the strength of the tool, object or structure of which it is a part, beyond the recognized operating limitations of the tool, object or structure.

~~(xiv)~~ (xv) "Department" means the Department of ~~Employment~~ Workforce Services.

~~(xv)~~ (xvi) "Drilling" (or "Drilling Operations") means any and all physical and mechanical aspects, including assembly and disassembly of all equipment customarily used in piercing or boring a well, as hereafter defined.

~~(xvi)~~ (xvii) "Employee" means a person permitted to work by an employer in employment for wages, salary or commission.

~~(xvii)~~ (xviii) "Employer" means any individual or organization including the State and all its political subdivisions which has in its employ one or more individuals performing services for it in employment.

~~(xviii)~~ (xix) "Employment" means all services for pay under a contract of hire.

~~(xix)~~ (xx) "Established Federal Standard" means any operative standard established by *Public Law 91-596, the Williams-Steiger Act*, which applies to all business, including the Oil and Gas Well Drilling Industry, in effect on or before date of promulgation of these rules and regulations.

~~(xx)~~ (xxi) "Finger" means a metal bar or structural steel shape which serves as a restraining support for pipe or other equipment racked in a derrick tower or mast.

~~(xxi)~~ (xxii) "Finger board" means a support for the finger. It may be a metal bar, structural steel shape, or an inside derrick platform secured in the derrick tower.

~~(xxii)~~ (xxiii) "First aid station" means an area designated as to where the primary supply of first aid equipment will be kept.

~~(xxiii)~~ (xxiv) "Flammable liquid" means any liquid having a flashpoint below 100°F. (37.8°C.), except any mixture having components with flash-points of 100°F. (37.8°C) or higher, the total of which make up ninety-nine (99) percent or more of the total volume of the mixture. Flammable liquids shall be known as Class I liquids. Class I liquids are divided into

three classes as follows:

(A) Class IA shall include liquids having flashpoints below 73°F. (22.8°C.) and having a boiling point below 100°F. (37.8°C.). Example: LPG.

(B) Class IB shall include liquids having flashpoints below 73°F. (22.8°C.) and having a boiling point at or above 100°F. (37.8°C.) Example: Acetone, Methyl Ethyl Ketone.

(C) Class IC shall include liquids having flashpoints at or above 73°F. (22.8°C.) and below 100°F. (37.8°C.). Example: Turpentine.

~~(xxiv)~~ (xxv) "Flashpoint" means the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid and shall be determined as follows:

(A) For a liquid which has a viscosity of less than 45 SUS at 100°F. (37.8°C.), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the *Standard Method of Test for Flashpoint by Tag Closed Tester (ASTM D-56-70)* shall be used.

(B) For a liquid which has a viscosity of 45 SUS or more at 100°F. (37.8°C.), or contains suspended solids or has a tendency to form a surface film while under test, the *Standard Method of Test for Flash-point by Pensky-Martens Closed Tester (ASTM D-93-71)* shall be used, except that the methods specified in *Note 1 to Section 1.1 of ASTM D-93-71* may be used for the respective materials specified in the Note.

(C) For a liquid that is a mixture of compounds that have different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in paragraph ~~(24 xxv)~~ (a A) or ~~(b B)~~ of this section on the liquid in the form it is shipped. If the flashpoint, as determined by this test is 100°F. (37.8°C.) or higher, an additional flashpoint determination shall be run on a sample of the liquid evaporated to ninety (90) percent of its original volume, and the lower value of the two tests shall be considered the flashpoint of the material.

(D) Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified in this subparagraph.

(xxvi) "Full body harness" means straps which may be secured about a person in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulder, with means for attaching it to other components of a personal fall arrest system.

~~(xxv)~~ (xxvii) "Guarded" means covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers or casings, barrier rails, safety bars, or screens, to eliminate the possibility of accidental contact with, or dangerous approach by, persons or objects.

~~(xxvi)~~ (xxviii) "Hazard" means any occupational condition or circumstance which is likely to cause death, injury or illness.

~~(xxvii)~~ (xxvix) "Hazardous Substance" means a substance which, by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful, is likely to cause occupational death, injury or illness.

~~(xxviii)~~ (xxx) "Hospitalization" means admitted to the hospital for treatment for a period of twenty-four (24) hours or more.

(xxxi) "Lower Explosive Limit " (LEL) means the lower limit of flammability of gas or vapor at ordinary ambient temperatures expressed by a percentage of gas or vapor in air by volume. This limit is assumed constant for temperatures up to 250°F (120°C) above this, it should be decreased by a factor of 0.7, because explosibility increases with higher temperatures.

(xxxii) "Lower Explosive Limit (LEL) Monitor" means an instrument that measures the LEL of flammable gases.

~~(xxx)~~ (xxxiii) "Moving Parts" means gears, sprockets, revolving shafts, clutches, belts, pulleys, or other revolving or reciprocating parts that are attached to, or form an integral part of, a machine.

~~(xxx)~~ (xxxiv) "National Consensus Standard" means any standard or modification thereof which:

(A) Has been adopted and promulgated by a nationally recognized standards-producing organization under procedures whereby it can be determined by the Secretary of Labor or by the Assistant Secretary of Labor that persons interested and affected by the scope or provisions of the standard have reached substantial agreement on its adoption;

(B) Was formulated in a manner which afforded an opportunity for diverse views to be considered;

(C) Has been designated as such a standard by the Secretary or the Assistant Secretary after consultation with other appropriate Federal Agencies.

~~(xxxi)~~ (xxxv) "NFPA" means National Fire Protection Association.

~~(xxxii)~~ (xxxvi) "Operator" means equipment operator.

~~(xxxiii)~~ (xxxvii) "Person" means an individual, governmental agency, partnership, association, corporation, business, trust, receiver, trustee, legal representative or successor to any of the foregoing.

~~(xxxiv)~~ (xxxviii) "Personal fall arrest system" means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a full body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

~~(xxxv)~~ (xxxix) "Place of Employment" means plant, premises, or any other place where directed by the employer or about which an employee is permitted to work.

~~(xxxvi)~~ (xxxI) "Power Transmission" means equipment such as shafting, gears, belts, pulleys or other parts used for transmitting power to the machine, and shall include prime movers.

~~(xxxvii)~~ (xli) "Pressure-vessel" means a storage tank or vessel which has been designed to operate at pressures above 15 psi.

~~(xxxviii)~~ (xlii) "Qualified" means one who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project.

~~(xxxix)~~ (xliii) "Safety Factor" means the ratio of the ultimate breaking strength of a member or piece of material or equipment to the actual working stress.

~~(xl)~~ (xliv) "Secretary" means the Secretary of the U.S. Department of Labor.

(A) May be referred to as the Assistant Secretary.

~~(xli)~~ (xlv) "Shall" means mandatory.

~~(xlii)~~ (xlvi) "Should" means recommended.

~~(xliii)~~ (xlvii) "Standard" means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes reasonably necessary or appropriate to provide safe or healthful employment and places of employment in the Oil and Gas Well Drilling Industry.

~~(xliv)~~ (xlviii) "Suitable" means that which fits, and has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

~~(xlv)~~ (xlix) "Suitable anchor" means that it is capable of supporting at least 5,000 pounds per employee attached or shall be designed, installed, and used as follows:

(A) as part of a complete personal fall arrest system which maintains a safety factor of at least two (2);

(B) under the supervision of a qualified person.

~~(xlvii)~~ (l) "Supervisor" means a person who has been given the control, direction and/or supervision of work performed by one or more employees.

~~(xlviii)~~ (li) "Tong/snubline" means a chain, wire or fiber rope, secured to a pipe tong handle which serves to impart a pulling power on the tong handle for the final tightening or torquing up of a threaded joint of pipe used in a well.

(lii) "Tugger line" means a wire rope powered by a winch and used for the controlled moving of light loads around a rig.

~~(xlviii)~~ (liii) "Variance" means exception to promulgated standards, rules and regulations. As stated in the Act, 27-11-111 - *Variances*; "Any person affected by this Act may request a variance to any standard, rule or regulation promulgated under this Act."

~~(xlix)~~ (liv) "Well" means a hole in the ground:

(A) made, or being made, by drilling, boring, or in any other manner, and from which oil or gas is obtained, or is obtainable; or is for the purpose of attempting to obtain oil or gas;

(B) made, or being made, by drilling or boring for the purpose of obtaining water to inject to an underground formation;

(C) used, drilled, or being drilled for the purpose of injecting gas, air, water or other substance to an underground formation;

(D) which is a test-hole, excluding seismic drilling; or

(E) drilled or being drilled, for any other purpose than listed above using equipment and machinery normally used for oil and gas well drilling.

~~(l)~~ (lv) "Well operator" means a person as herein defined who has the responsibility, management, and general control of an oil or gas well, or lessee, sub-lessee, owner or assignee of same.

Section 3. Petition for Promulgation, Amendment or Repeal of Rules and Regulations.

Any interested person may petition in writing the Department or Commission requesting the promulgation, amendment or repeal of any rules and regulations and may accompany his petition with relevant data, views and arguments. The Department or Commission may prescribe by rule the form of such petition and the procedure for their [its] submission, consideration and disposition. Upon submission of such a petition, the Commission, as soon as practicable, either shall deny the petition in writing (stating its reasons for the denial) or initiate rulemaking proceedings in accordance with *16-3-103, Wyoming Statutes*. The action of the Commission in ~~denying~~ a petition shall be final and not subject to review.

Section 4. Amendments for Rules and Regulations.

(a) The Commission shall have the authority under *27-11-105(b)(ii) of the Act*, to devise, formulate, adopt, amend and repeal rules and regulations promulgated under the Act.

(b) In the event of conflict among any such standards, the Commission shall take the action necessary to eliminate the conflict, including the amendment or revocation of a rule or regulation, so as to assure the greatest protection of the health and safety of the employees and employers affected by the Act.

Section 5. Applicability of Rules and Regulations.

(a) In addition to the requirements contained in the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations and those Wyoming Occupational Health and Safety 1926 - Construction Rules which apply to site clearing, rig erection and rig dismantling, these rules and regulations shall apply to all business and industries, employers and employees on the job site.

(b) If a particular requirement contained herein is specifically applicable to a condition, practice, means, method, operation, or process, it shall prevail over any different general rule or regulation which might otherwise be applicable to the same condition, practice, means, method, operation, or process.

Section 6. Incorporation by Reference.

(a) The standards, rules and regulations of the U.S. Government, National Fire Protection

Association, American National Standards Institute and other organizations which are not agencies of the State of Wyoming which are legally incorporated by reference in these rules and regulations, shall have the same force and effect as these rules and regulations for Oil and Gas Well Drilling.

(b) Copies of the standards, rules and regulations which are incorporated by reference may be examined at the office of Wyoming Workers' Safety and Compensation, OSHA in Cheyenne, Wyoming. Copies of such private standards, rules or regulations may be obtained from the issuing organizations. Their names and addresses are listed in these rules and regulations.

(c) Any changes in the standards, rules or regulations incorporated by reference in these rules and regulations and an official historic file of such changes are available for inspection at the office of Wyoming Workers' Safety and Compensation OSHA, in Cheyenne, Wyoming.

CHAPTER 3

GENERAL HEALTH AND SAFETY PROVISIONS

Section 1. General Rules for Well Operators, Employers, Employees, Contractors and Sub-Contractors.

(a) Each well operator, employer, employee, contractor and subcontractor shall separately be charged with the responsibilities and duties as required by the Act, the Rules of Practice and Procedure, the Rules and Regulations (General), the Rules and Regulations for Construction and these rules and regulations, as they relate to the machinery, tools, materials or equipment and to the employees of each of them as applicable.

(b) Accident prevention responsibilities:

(i) It shall be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with these rules and regulations.

(ii) Such programs shall provide for frequent and regular inspections of the establishment, materials, and equipment to be made by competent persons designated by the employer.

(iii) The employer shall prohibit the use of any machinery, tool, material, or equipment which he knows or reasonably should know is not in compliance with any applicable requirement of these rules and regulations. Such machine, tool, material, or equipment shall either be identified as unsafe by locking the controls to render them inoperable or shall be physically removed from its place of operation.

(iv) The employer shall permit only authorized persons, or employees being trained under the supervision of a qualified person(s) to operate equipment or machinery.

(c) No employer for any part of the operation covered by these rules and regulations shall require any employee to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety, beyond the normal hazards inherent in the job.

(d) Any two (2) or more employers who have employees at one job site (such as prime contractors and sub-contractors) may make their own arrangements with respect to obligations which might be more appropriately treated on a job site basis rather than individually. Thus, for example, the prime contractor and his sub-contractors may wish to make an agreement that the prime contractor or one of the sub-contractors will provide all required first-aid or toilet facilities, thus relieving the subcontractors from the actual, but not any legal responsibility (or, as the case may be, relieving the other sub-contractors from this responsibility.)

(e) The well operator shall be responsible for furnishing the general drilling program and plans and will provide contractor and employers with all available information concerning abnormal pressure conditions and hazardous fluids which may be encountered in the drilling operations to the best of the well operator's knowledge.

(f) No person shall cause the well to be spudded or other operations to proceed until the contractor or sub-contractor, as appropriate, has declared his equipment and employees are safely prepared to proceed.

(g) No person shall require rig modification to be made or cause auxiliary equipment to be installed which are in conflict with these rules and regulations.

Section 2. Safety Training and Education.

(a) Education and training of employees in the recognition, avoidance and prevention of unsafe conditions in employments covered by these rules and regulations shall be given.

(b) Each employee shall be instructed in the recognition and avoidance of unsafe conditions and the rules and regulations applicable to his work environment to control or eliminate any occupational hazards or other exposure to illness or injury.

(c) Employees required to handle or use poisons, corrosives, and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene and personal protective measures required.

(d) Employees required to handle or use flammable liquids, gases, or toxic materials shall be instructed in the safe handling and use of these materials and made aware of the specific requirements contained in *Subpart G and H and other applicable subparts of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations*.

(e) All employees required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.

(i) For purposes of this paragraph, "confined or enclosed space" means any space having a limited means of egress, which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, and open top spaces more than four (4) feet in depth such as pits, tubs, vaults, and vessels.

(f) All training required by these rules and regulations shall be documented.

Section 3. First Aid and Medical Attention.

First aid services and provisions for medical care shall be made available for every employee covered by these rules and regulations. Regulations prescribing specific requirements for first aid, medical attention, and emergency facilities are contained in Chapter 4, Section 5. of these rules and regulations.

Section 4. Fire Prevention and Protection.

(a) There shall be developed and maintained an effective fire prevention and protection program at the job site.

(b) Such fire program shall have the following requirements:

(i) Fire fighting equipment shall not be tampered with and shall not be removed for other than the intended fire fighting purpose,

(ii) Fire extinguishers and other fire fighting equipment shall be suitably located and plainly labeled as to their type and method of operation.

(iii) Used cleaning rags and combustible waste material shall be kept to a minimum, stored in closed metal containers and disposed of daily.

(iv) Access to exits or fire extinguishers shall not be blocked or obscured by clothing, materials or equipment.

(v) Well cellars, well floors and ground areas adjacent to derricks shall be kept free from accumulation of oil which might create or aggravate fire hazards.

(vi) Fire protection and fire fighting equipment shall be maintained in a serviceable condition at all times.

(vii) Records shall be kept showing the date fire extinguishers were last inspected, tested or refilled, and by whom.

(viii) All fire extinguishers shall be maintained, inspected and hydrostatically tested in accordance with *1910-157 of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations*.

(ix) Every drilling rig shall have readily accessible not less than four (4) approved (Underwriter's Laboratories, Inc. or Factory Mutual Engineering Corp.) extinguishers, each with a minimum capacity of twenty (20) pounds multi-purpose dry chemical, or equivalent rated material. The above is minimum and many occasions may warrant more equipment of larger size.

(a) CBM Natural Gas drilling rigs shall have readily accessible not less than two (2) approved extinguishers with a minimum capacity of twenty (20) pounds multi-purpose dry chemical.

(b) All drilling rig crew at the rig site will be trained in the proper use of a multi-purpose fire extinguisher annually.

(x) Carbon tetrachloride extinguishers shall not be permitted.

(xi) Every welding operation shall have a suitable extinguisher available.

(xii) Extreme caution shall be used with open flames around oil and gas operations.

(xiii) Natural or liquefied petroleum gas (LPG) shall not be used to operate spray guns or other pneumatic equipment.

Section 5. Acceptable Inspections.

(a) Pressure vessels. Valid inspection by an insurance company or regulatory authority shall be deemed as acceptable evidence of safe installation, inspection and testing of pressure vessels provided by the employer.

(b) Boilers. Boilers provided by the employer shall be deemed to be in compliance with these requirements when evidence of current and valid certification by an insurance company or regulatory authority attesting to the safe installation, inspection and testing is presented.

(c) Other requirements. Regulations prescribing specific requirements for other types of pressure vessels and similar equipment are contained in *Subpart M of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations*.

Section 6. Illumination.

(a) Adequate lighting shall be provided in all work areas governed by these rules and regulations.

(b) Work areas shall be illuminated by not less than the specified footcandles of light indicated in *Chapter 6, Section 5*. of these rules and regulations.

CHAPTER 4

PERSONAL PROTECTIVE EQUIPMENT

Section 1. Head Protection.

(a) An approved helmet (safety hard hat) shall be required to be worn by all employees while within working areas, with the exception of self-contained areas such as truck cabs and field offices.

Section 2. Eye and Face Protection.

(a) General.

(i) The use of protective eye and face equipment where there is a potential of injury that can be prevented by such equipment shall be required. In such cases, the use of a type of protector suitable for the work to be performed shall be required. No unprotected person shall knowingly be subjected to a hazardous environmental condition. Suitable eye protectors shall be required where machines or operations present the hazard of flying objects, glare, liquids, injurious radiation, or a combination of these hazards.

(ii) Protectors shall meet the following minimum requirements:

(A) They shall provide adequate protection against the particular hazards for which they are designed.

(i) Safety glasses shall be the wrap around type or with side shields.

(B) They shall be reasonably comfortable when worn under the designated conditions.

(C) They shall fit snugly and shall not unduly interfere with the movements of the wearer.

(D) They shall be durable.

(E) They shall be capable of being disinfected.

(F) They shall be easily cleanable.

(G) They shall be kept clean and in good repair.

(iii) Employees whose vision requires the use of corrective lenses and spectacles, and who are required by these rules and regulations to wear eye protection, shall be required to wear

goggles or spectacles of one of the following types:

- (A) Spectacles whose protective lenses provide optical correction.
- (B) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.
- (C) Goggles that incorporate corrective lenses mounted behind the protective lenses.
- (iv) Every protector shall be distinctly marked to facilitate identification of the manufacturer.
- (v) When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.
- (vi) Design, construction, testing, and use of devices for eye and face protection shall be in accordance with *American National Standard for Occupational and Educational Eye and Face Protection, ANSI Z87.1-1989* **Current Edition.**

Section 3. Occupational Foot Protection.

- (a) Safety shoes or safety boots shall be required to be worn in the working areas.
- (b) Metatarsal guards should be required as additional protection where the danger of a crushing injury to the arch of the foot exists.
- (c) Safety-toe footwear for employees shall meet the requirements and specifications of *American National Standard for Men's Safety Toe Footwear, ANSI Z41.1-1991*, **American Society for Testing and Materials (ASTM) F-2412-Current Edition "Standard Test Methods for Foot Protection," and ASTM F-2413-Current Edition, "Standard Specification for Performance Requirements for Protective Footwear,"**

Section 4. General.

- (a) Unreasonably loose, poorly fitted or torn clothing shall not be worn.
- (b) Clothing which has been saturated with flammable or toxic substances shall be immediately removed, and the affected skin area thoroughly washed.
- (c) Hazardous jewelry, such as finger rings, chain bracelets, etc., should not be worn. This is not intended to include wristwatches equipped with bands which will easily break.
- (d) Hair of such length that it may become entangled in moving or rotating machinery shall

be contained in a suitable manner. Beards and sideburns of employees shall be kept in such condition and of such length so as not to interfere with the proper and efficient use of gas masks, air masks, or other safety apparel or equipment.

(e) ~~Where special circumstances warrant, or w~~ Where these rules and regulations prescribe the use of full body harnesses:

(i) An approved full body harness, provided by the employer, suitable for the particular job or hazard exposure shall be worn, and shall be attached by means of a personal fall arrest system to a suitable anchor and adjusted to allow a minimum drop, in no case greater than six (6) feet;

(ii) A separate life line shall be provided for each employee exposed to the particular job or hazard;

(iii) Personal fall arrest system components, ie., anchorage, connectors, full body harness, etc., shall be inspected prior to each use and shall be repaired or replaced if found to be defective.

(f) Flame Resistant Clothing (FRC) shall be worn by all employees within seventy-five (75) feet of well bore once the well has been spud in, with the exception of self-contained areas such as truck cabs and field offices.

(i) Flame Resistant Clothing (FRC) for employees shall meet the requirements and specifications of NFPA 2112 Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire, Current Edition, and NFPA 2113 Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire, Current Edition.

(f) (g) Special protective wearing apparel shall be provided and required to be worn as deemed necessary because of an unusually hazardous situation not normal to the job.

Section 5. Emergency Equipment.

(a) Any area suspected of insufficient oxygen or contamination by flammable or toxic gases, such as Hydrogen Sulfide (H₂S) vapors or dust shall not be entered until sufficient tests have been made with appropriate instruments to determine extent of hazard and area is purged to reduce the hazard to an allowable concentration.

(i) In the event of the presence of H₂S (~~Hydrogen Sulfide~~) the ~~following~~ following limits of exposure shall apply:

(A) Ceiling value = 20 10 ppm

(B) Time weighted average (TWA) = 10 ppm

(C) Acceptable maximum peak above the acceptable ceiling concentration for an eight (8) hour shift = 50 ppm. (10 minutes once only if no other measurable exposure occurs.)

(b) In the case of toxic atmosphere or lack of oxygen, any employee entering such area shall be required to use the proper respiratory equipment.

(c) In addition, any employee entering such atmospheres as specified in 5.(b) of this Section shall be required to wear a safety belt with attached tail line for emergency retrieval. Employee shall be stationed outside the hazard area with the proper rescue equipment to assist in case of emergency, and to attend to the retrieve end of the tail line.

(d) Canister-type filter masks shall be used only in an area where sufficient oxygen exists (at least 16 percent by volume).

(e) Canister-type filter masks shall be used only in areas where their capabilities will not be exceeded. Such canisters shall be proper for the hazardous contaminant.

(f) In those atmospheres where tests indicate oxygen content is less than ~~that necessary to sustain life (normally considered 16~~ **nineteen and a half (19.5)** percent oxygen by volume), employees shall be provided with and required to use self-contained ~~respirators~~ **breathing apparatus (SCBAs)** ~~(air packs); or~~

(g) Supplied-air ~~respirators~~ **breathing apparatus** may be used instead of ~~self-contained respirators~~ **SCBAs** in subparagraph f. of this Section. In the event supplied-air ~~respirators~~ **breathing apparatus** are used, they shall be selected, used and maintained in accordance with *Subpart I, Section 3.-Respiratory Protection, of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations.*

(h) All respirators on work locations shall be:

(i) Housed in a proper cabinet or other appropriate container located close to, but not within, the potential area of use;

(ii) Inspected at least monthly and documented for constant service readiness; except, if rented, prior to each use, but at least monthly.

(NOTE: Caution should be observed when using ~~self-contained respirators~~ **[Air Packs]** SCBAs at low temperatures due to pressure drop.)

(iii) Serviced and brought back to readiness after each usage.

(i) All employees shall be trained in the use and operation of employer provided breathing

equipment available on the job and employees whose facial contours, physical impairments, hair or beard styles that would interfere with the seal necessary for respiratory protective devices, shall not enter areas in which such protection devices may be necessary.

(j) ~~There shall be readily available medical personnel for advice and consultation on matters of occupational health. The information to receive additional emergency aid such as doctor, ambulance service, etc., shall be conspicuously displayed.~~ The well operator, prior to commencement of work in an area, shall provide provisions for contacting emergency medical services in case of serious injury.

(i) No derrick shall be rigged up on a work site until the emergency medical service communications has been established and tested.

(ii) A poster shall be fastened at or near emergency communications devices plainly stating the phone numbers of emergency medical services within the district of the work site.

(k) There shall be provided a first aid kit (not less than twenty four (24) unit type) that shall be maintained at the drilling site and inspected at frequent intervals. The first aid kit shall be replenished when any unit in the kit reaches a twenty five (25) percent depletion of that unit.

(i) First aid station(s). First aid station(s) shall be located as close as practicable to the highest concentration of personnel.

(ii) First aid station(s) shall be well marked and available to personnel during all working hours.

(iii) One person holding a valid first aid certificate shall be responsible for the proper use and maintenance of the first aid station(s).

(iv) A "unit" is defined as a package, bottle or other container which contains a specific item of first-aid material. For example, a bottle of Hydrogen Peroxide, a box of adhesive bandages, a box with a roll of gauze bandage, etc.

~~(v) A poster shall be fastened at or near all radios and/or radio phones plainly stating the phone numbers of available doctors, hospitals, and ambulance services within the district of the work site.~~

~~(vi)~~ (v) In addition to the first-aid kit which must be kept on the equipment or at the place of work, there shall be available within the closest practicable distance from the operations (not to exceed five (5) minutes) the following items:

(A) ~~One (1) set of arm and leg splints;~~ Two (2) adjustable medical splints; one (1) arm, one (1) leg;

(B) Two (2) all wool blankets or blankets equal in strength and fire resistance;

(C) One (1) stretcher

(l) One (1) or more employees on each drilling site shall be adequately trained to render first aid and cardiopulmonary resuscitation (CPR), and shall have a valid certificate from the American Red Cross or equivalent training that can be verified by documentary evidence, and who will always be present.

(m) ~~Where harmful chemicals are being used, readily accessible facilities shall be available for rapid flushing of the eyes and/or skin areas.~~

~~(i) As a minimum, where and when harmful chemicals are being used, there shall be in the first aid station(s) a one (1) quart eyewash bottle of potable water. There shall also be on site and available an additional supply of such water which can be used to refill the eyewash bottle. Such additional supply shall be the equivalent of four (4) or more one quart bottles.~~

Where the eyes or body of personnel may be exposed to injurious materials, eyewash equipment for emergency use shall be provided. For information on emergency eyewash and shower equipment see, American National Standard Institute (ANSI) Z358.1-Current Edition.

CHAPTER 5

SAFEGUARDS

Section 1. Machinery Operation, Lockouts, Guarding and Maintenance.

(a) Requirements.

(i) Only employer-authorized persons shall operate machinery of any kind.

(ii) Employees shall be properly trained and, ~~by the employer~~, judged by the employer, to be competent before being designated as equipment operators.

(iii) Equipment operators shall bring any unsafe condition to the attention of the employer for evaluation, inspection, and/or correction.

(iv) When maintenance or servicing is to be accomplished on power-driven equipment, the immediate source of power to the individual piece of equipment to be worked on shall be locked out. When maintenance or servicing is to be accomplished on electrical lines, air lines, gas lines or other lines containing hazardous materials, the line being worked on shall be rendered safe by emptying, purging, disconnecting or other means before work is begun.

(v) When more than one employee is to work on the same piece of equipment, the employer may designate one employee to be in charge of the lockout procedure.

(vi) Safety locks shall not be removed from main power breakers, disconnect switches, or valves until all personnel are in the clear.

(vii) All belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, or other reciprocating and rotating parts, with the exception of the rotary table, kelly and cathead, shall be guarded unless they are guarded by location, so positioned to prevent any person from coming in contact therewith. Guarding shall meet the requirements as set forth in *Subpart O, "Machinery and Machine Guarding", of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations* .

(A) The rotary table shall have a substantially constructed metal plate guard adequately covering the outer edge of the table and extending downward to completely cover all the exposed rotating sides of the table, including the pinion gear. This subparagraph does not pertain to the top surface of the rotary table, kelly, or kelly bushing for which guards are not required when operated by the driller or other authorized persons except kelly bushings with protrusions of the J-bolt type shall require such guards.

(B) ~~The equipment operator~~ driller or other authorized persons shall never engage the rotary clutch without watching the rotary table.

(C) At any time an employee's work activities require handling materials which can become entangled in the rotary table, the kelly bushing or kelly, while such equipment is in motion, there shall be at the controls a person capable of stopping the rotating equipment.

(i) The authorized person at the controls shall control the access and activities of personnel on the drilling floor while equipment is rotating, or ~~will~~ shall stop such equipment from rotating until there is no danger to personnel from such rotating equipment.

(D) When the rotary table and/or kelly bushing are in motion, all hoses, lines, and other such entangling material in use, with the exception of spinning chains, shall be controlled to the extent that the loose end of the material shall not be closer than six (6) inches of the kelly bushing.

(E) The spinning chain shall not be wrapped around the joint of pipe in the mousehole, nor shall it be handled on the drilling floor within twenty four (24) inches of the rotating parts of the rotary table, kelly bushing or kelly.

(F) Drilling rigs which use rotary table and kelly bushing guards need not comply with (D) and (E) above.

(viii) Machinery shall not be operated without all guards properly maintained and in position, except during maintenance, repair or rigup work, when limited testing may be performed by a qualified person.

(ix) No employee shall clean or lubricate any machinery where there is danger of contact with the moving part until such machinery has been stopped.

(x) Machinery and equipment shall be maintained in such condition as to ensure safe operations and working conditions.

(xi) All guards and protective devices shall be replaced and proper personnel notified when maintenance is complete.

(xii) All tools and equipment used by employees shall be in safe condition.

(xiii) Electric tools shall be grounded by use of approved devices maintained in proper condition (Exception--"Double Insulated" tools may be used in lieu of the grounding requirement.).

(xiv) Electrical or pneumatic hand tools shall have a deadman switch or so arranged that the starting switch ~~will~~ shall not be locked in.

(xv) Tools or other materials shall not be carried up or down a ladder unless properly secured to the body, leaving both hands free for climbing.

(xvi) Maintenance personnel on a contract basis shall abide by all safety rules and regulations pertaining to oil and gas well drilling.

(xvii) Equipment used in winching operations shall be inspected, and shall be maintained in safe operating condition.

(xviii) All rigging shall be in accordance with recognized safe practices.

(xix) All winch lines, anchors, snatch blocks, hooks, clamps and other fittings shall be of suitable size and capacity.

(xx) Warning signs shall be posted to denote any unusual hazardous situation during the existence of such hazard.

(xxi) Warning signs shall be posted in areas where the use of personal protective equipment is required.

(xxii) Identification signs shall be conspicuously posted to locate emergency equipment.

(xxiii) Containers of poisonous, toxic, flammable and/or explosive material shall be properly labeled and appropriately stored according to content.

(xxiv) (For cylinders used in welding, cutting, and brazing operations, see *Chapter 5, Section 2.*) Compressed gas cylinders shall be stored in a well-protected, well-ventilated location, at least twenty (20) feet from combustible materials. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or objects to tampering by unauthorized persons.

(A) Cylinders shall be secured in an upright position; and

(B) Shall be separated in storage as to full and empty cylinders and shall be separated as to contents; and

(C) Handled carefully to prevent dropping; and

(D) Transported with gauges removed and caps in place.

(xxv) No material used for cleaning shall have a flashpoint less than 100°F (37.8°C). Examples of materials which have flashpoints below 100°F (37.8°C) are Gasoline, Naphtha, etc.

(xxvi) An emergency stop device shall be provided for each traveling block by the use of an automatic stop device and/or by the use of crown bumper blocks to prevent double blocking.

Section 2. Safety Procedures for Welding, Cutting and Brazing.

(a) **Welding, cutting and brazing within seventy-five (75) feet of well bore shall require a written hot work permit in accordance with Chapter 6 section 8, (c) (iv).**

(i) Welding, cutting and brazing **more than seventy-five (75) feet from the well bore** shall ~~not be done in the presence of explosive gas or fumes, or near combustible materials, except when~~ be performed in compliance with *Subpart Q of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations*.

(b) Proper protective hoods and glasses shall be worn by the welder.

(c) Fire extinguishers shall be provided for welding operations as required by Chapter 3, Section 4.b.(xi) of these rules and regulations.

(d) Compressed gas cylinders shall be stored in a well-protected, well-ventilated, dry location, at least twenty (20) feet from combustible materials. Cylinders shall be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures, such as lockers and cupboards.

(i) Cylinders shall be secured in an upright position; and

(ii) Shall be separated in storage as to full and empty cylinders and shall be separated as to contents; either by a distance of twenty (20) or by a non-combustible barrier at least five (5) feet high having a fire resistance rating of at least one-half (1/2) hour; and

(iii) Handled carefully to prevent dropping; and

(iv) Transported with gauges removed and caps in place, except bottles in use on welding trucks or carts in the work area.

(e) Oxygen cylinders, and all attachments thereto, shall be kept free of all grease and oil and other hydrocarbons.

CHAPTER 6

FACILITIES

Section 1. Ladders, Stairways, Runways, Floors and Platforms.

(a) General Requirements.

(i) Every scaffold, stage, walkway, working platform, stairway and ladder, whether temporary or permanent, shall be constructed and maintained in safe condition and shall not be altered or moved while in use.

(ii) Work areas shall be kept clean and free of debris.

(iii) Walkways, stairways and exits shall be kept clear to provide unimpeded ingress and egress at all times.

(iv) Safe ingress to, and egress from, all work areas shall be provided.

(v) Every stairway, ladder, ramp, runway, floor and platform shall be kept reasonably free of objects and substances which may create a slipping or tripping hazard, or prevent or hinder the escape of workmen in an emergency.

(A) Standard railing shall be provided on the open sides of all exposed stairways and stair platforms with four or more risers.

(vi) With the exception of exit and entrance openings, and loading and unloading areas, standard railing with midrail, and four (4) inch toe-board shall be installed at the outer edge of any floor, platform, walk-way, ramp or runway which is ~~six (6)~~ **four (4)** feet above the ground, or another floor or working level. Where railings are not feasible, chains or cable **of suitable strength** may be used.

(A) A standard railing shall not be used for other than personnel protection purposes. For definition and construction requirements of a standard railing, refer to *Subpart D of the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations*.

(B) A guardrail used and/or needed for the purpose of actual or potential containment of equipment or material shall be of such construction and strength as to effectively contain the full load or stress which may be anticipated to be applied upon it. (For example, if twenty-five (25) pieces of six (6) inch pipe are contained by a guardrail, or any attachment to the guardrail, such guardrail and attachment must be capable of safely holding that quantity of pipe, plus an additional allowance for at least two (2) employees, assuming 200 pounds per employee).

(vii) A stabbing board shall be provided for and used by ~~a worker~~ personnel when working above the derrick floor while running casing or tubing.

(A) A stabbing board shall consist of at least one (1) three (3) inch by twelve (12) inch number one fir plank or metal of at least the same width and strength. If wood is used, expanded metal or a cable shall be fastened to the underside of the plank along its full length, and each end of the stabbing board shall be fastened to the derrick with a wire rope at least one-fourth (1/4) inch in diameter or chain of equivalent strength.

(B) On single stand rigs where there is insufficient room for twelve (12) inch wide stabbing boards, a special stabbing platform shall be designed which will include all the safety features outlined in (a) above.

(viii) A stairway shall be installed beside the ramps which shall extend from the ground to the derrick floor.

(ix) Every opening in a derrick floor shall be covered or guarded when not being used.

(x) A derrick floor, derrick walk or engine room floor shall not be used as a storage platform for equipment or material that is not required for immediate use, unless:

(A) the material or equipment is properly racked or stored, and

(B) does not cause congestion of work areas or walkways.

(xi) On all derricks, ladder platforms shall be installed adjacent to, and provide unimpeded access to, the fourble board.

(xii) Ladder platforms shall be located at the crown of all drilling rigs.

(xiii) With the exception of the stabbing board, every platform erected on the inside of a derrick shall completely cover the space from the working edge of the platform back to the legs and girts of the derrick.

(xiv) All platform planks shall be secured.

(xv) A safety cable shall be secured to the full length of the underside of each working platform in the derrick.

(xvi) Each mast or derrick platform shall be constructed, maintained and secured to the mast or derrick to withstand the weight of employees or other stresses which may normally

be placed upon it.

(xvii) The board fingers and diving board shall be connected to their supporting beam with wire rope not less than one-fourth (1/4) inch in diameter, or chain of equivalent strength.

(xviii) Unattached tools or material of any kind shall not be placed in the mast or derrick above the floor unless there is occasion for their immediate use.

(xix) There shall be no openings large enough to permit a person to fall between the beams or main supports of framework of the crown.

Section 2. Fixed Ladders.

(a) Design requirements and considerations. All ladders, appurtenances, and fastenings shall be designed to meet the following load requirements:

(i) The minimum design live-load shall be a single concentrated load of 200 pounds.

(ii) The number and position of additional concentrated live-load units of 200 pounds each as determined from anticipated usage of the ladder shall be considered in the design.

(iii) The live-loads imposed by persons occupying the ladder shall be considered to be concentrated at such points as will cause the maximum stress in the structural member being considered.

(iv) The weight of the ladder and attached appurtenances together with the live-load shall be considered in the design of rails and fastenings.

(b) Specific features-Rungs and cleats.

(i) All rungs shall have a minimum diameter of three-fourths (3/4) inch for metal ladders, and a minimum diameter of one and one-eighths (1-1/8) inches for wooden ladders.

(ii) The distance between rungs, cleats, or steps shall not exceed twelve (12) inches, measured from the top of rung, cleat or step to the top of the next rung, cleat or step, and shall be uniform throughout the length of the ladder.

(iii) The minimum clear length of rungs or cleats shall be sixteen (16) inches.

(iv) Rungs, cleats, and steps shall be free of splinters, sharp edges, burrs, or projections which may be a hazard.

(v) Where there is a walking/working platform or access to a ladder twenty-four (24) inches or more above the floor or ground level, a step or steps of not more than twelve (12) inches riser height shall be provided for access.

(vi) Side rails which might be used as a climbing aid shall be of such cross-sections as to afford adequate gripping surface without sharp edges, splinters or burrs.

(vii) Fastenings shall be an integral part of fixed ladder design.

(viii) All splices and connections shall have smooth transition with original members and with no sharp or extensive projections.

(ix) Adequate means shall be employed to protect dissimilar metals from electrolytic action when such metals are joined.

(x) All welding shall be in accordance with the "*Code for Welding in Building Construction*" (AWS D1.0-66).

(xi) Protection from deterioration. Metal ladders and appurtenances shall be painted or otherwise treated to resist corrosion and rusting when location demands. When different types of materials are used in the construction of a ladder, the materials used shall be so treated as to have no deleterious effect one upon the other.

(c) On the climbing side of fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object shall be thirty-six (36) inches for a pitch of 76°, and thirty (30) inches for a pitch of 90°, with minimum clearances for intermediate pitches varying between these two limits in proportion to the slope, except as provided in paragraph (3) of this subsection.

(i) Ladders without cages or wells. A clear width of at least fifteen (15) inches shall be provided each way from the centerline of the ladder in the climbing space, except when cages or wells are necessary.

(ii) Clearance in back of ladder. The distance from the center-line of rungs, cleats or steps to the nearest permanent object in back of the ladder shall be not less than seven (7) inches. When unavoidable obstructions are encountered, minimum clearances for the two rungs on either side of the obstruction shall be measured vertically from the obstruction no less than one and a half (1½) inches to the upper rung and four and a half (4½) inches to the lower rung.

(iii) Clearance in back of grab bar. The distance from the centerline of the grab bar to the nearest permanent object in back of the grab bar shall not be less than four (4) inches. Grab bars shall not protrude on the climbing side beyond the rungs of the ladder which they

serve.

(iv) Step-across distance. The step-across distance from the nearest edge of ladder to the nearest edge of equipment or structure shall be not more than 12 inches, or less than two and a half (2½) inches.

(d) Cages or wells shall be provided on ladders of more than twenty (20) feet to a maximum unbroken length of thirty (30) feet.

(i) Cages shall extend a minimum of forty-two (42) inches above the top of landing, unless other acceptable protection is provided.

(ii) Cages shall extend down the ladder to a point not less than seven (7) feet nor more than eight (8) feet above the base of the ladder, with bottom flared not less than four (4) inches, or portion of cage opposite ladder shall be carried to the base.

(iii) Cages shall not extend less than twenty-seven (27) nor more than twenty-eight (28) inches from the centerline of the rungs of the ladder. Cage shall not be less than twenty-seven (27) inches in width. The inside shall be clear of projections. Vertical bars shall be located at a maximum spacing of 40° around the circumference of the cage; this will give a maximum spacing of approximately nine and a half (9½) inches, center-to-center.

(iv) Ladder wells shall have a clear width of at least fifteen (15) inches measured each way from the centerline of the ladder. Smooth-walled wells shall be a minimum of twenty-seven (27) inches from the centerline of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there shall be a minimum of thirty (30) inches from the centerline of the rungs.

(e) Landing platforms. When ladders are used to ascend to heights exceeding twenty (20) feet (except on chimneys), landing platforms shall be provided for each thirty (30) feet of height or fraction thereof except that, where no cage, well, or ladder safety device is provided, landing platforms shall be provided for each twenty (20) feet of height or fraction thereof. Each ladder section shall be offset from adjacent sections. Where installation conditions (even for a short, unbroken length) require that adjacent sections be offset, landing platforms shall be provided at each offset.

(i) Where an employee has to step a distance greater than twelve (12) inches from the centerline of the rung of a ladder to the nearest edge of structure or equipment, a landing platform shall be provided. The minimum step-across distance shall be two and a half (2½) inches.

(ii) All landing platforms shall be equipped with standard railings and toeboards, so arranged as to give safe access to the ladder. Platforms shall be not less than twenty-four (24)

inches in width and thirty (30) inches in length.

(iii) One rung of any section of ladder shall be located at the level of the landing laterally served by the ladder. Where access to the landing is through the ladder, the same rung spacing as used on the ladder shall be used from the landing platform to the first rung below the landing.

(f) Ladder extensions. The side rails of through or side-step ladder extensions shall extend three and a half (3½) feet above parapets and landing. For through ladder extensions, the rungs shall be omitted from the extension and shall have not less than eighteen (18) nor more than twenty-four (24) inches clearance between rails. For side-step or offset fixed ladder sections, at landings, the side rails and rungs shall be carried to the next regular rung beyond or above the three and a half (3½) foot minimum.

(g) Grab bars shall be spaced by a continuation of the rung spacing when they are located in the horizontal position. Vertical grab bars shall have the same spacing as the ladder side rails. Grab-bar diameters shall be the equivalent of the round-rung diameters.

(h) Ladder safety devices may be used on tower, water tank and chimney ladders over twenty (20) feet in unbroken length in lieu of cage protection. No landing platform is required in these cases. All ladder safety devices such as those that incorporate lifelbelts, full body harnesses, friction brakes, and sliding attachments as an integral unit shall meet the design requirements of the ladders they serve.

(i) The preferred pitch of fixed ladders shall be considered to come in the range of 75° and 90° with the horizontal.

(i) Fixed ladders shall be considered as substandard if they are installed within the substandard pitch range of 60° and 75° with the horizontal. Substandard fixed ladders are permitted only where it is found necessary to meet conditions of installation. This substandard pitch range shall be considered as a critical range to be avoided, if possible.

(ii) This section covers only fixed ladders within the pitch range of 60° and 90° with the horizontal.

(iii) Ladders having a pitch in excess of 90° with the horizontal are prohibited.

(j) All ladders shall be maintained in a safe condition. All ladders shall be inspected regularly, with the intervals between inspections being determined by use and exposure.

(k) Ladder requirements not specifically referenced in this section shall be in accordance with the State of Wyoming Occupational Health and Safety 1910 - General Rules and Regulations, Subpart D, Walking and Working Surfaces.

(l) All mast ladders on all drilling rigs are exempted from the requirements of subsections (b)(i), (ii), (iii) and (c) (ii) and (d) of this section, provided the employer makes available and requires the use of ~~ladder climbing devices.~~ **an approved personal fall arrest system.**

Section 3. Construction and Loading of Pipe Racks.

(a) General requirements.

(i) Construction of pipe racks shall be so designed as to support any load to be placed thereon.

(A) Pipe racks shall be set level laterally on a stable foundation. They may slope front to back to facilitate laying down or picking up pipe.

(B) Provision shall be made to prevent pipe, tubular material or other round material from rolling off pipe racks.

(ii) No employee shall go between pipe racks and a load of pipe during loading, unloading and transferring operations.

(A) Pipe shall be loaded and unloaded, layer by layer, with the bottom layer pinned or blocked securely on all four (4) corners, and each successive layer shall be effectively chocked or blocked.

(B) Spacers shall be used, and evenly spaced, between the layers of pipe or material on the rack.

(C) When pipe is being moved or transferred between pipe racks, truck and trailer, the temporary supports for skidding or rolling shall be so constructed, placed and anchored as to support the load that is placed on them.

(iii) During weather of potential freezing, pipe standing on end shall be so positioned as to afford proper drainage.

Section 4. Flammable Liquid Handling and Storage (Flashpoint Less Than 100°F.).

(a) Requirements.

(i) Only approved containers, or approved safety containers, shall be used as containers of flammable liquids having a flashpoint lower than 100°F., such as gasoline, naphtha,

etc.

(ii) Smoking or open flames shall not be allowed within **25 seventy five (75)** feet of the handling of flammable liquids. Any engine being refueled shall be shut off during such refueling.

(iii) Liquefied Petroleum Gas (LPG) shall be handled in accordance with the *State of Wyoming Occupational Health and Safety 1910 - Genral Rules and Regulations*, Subpart H, in all operations.

(iv) An electrical bond shall be maintained between containers when a flammable liquid is being transferred from one to the other.

(v) Storage of flammable liquids shall be in approved containers.

(vi) Discharge nozzles and valves shall be of the quick, self-closing type.

(vii) Except for the fuel in the tanks of the operating equipment, which may include a totally-enclosed day tank system, no gasoline or other flammable fuel shall be stored closer than seventy five (75) feet of a well.

(A) A totally enclosed day tank system means that the tank capacity and its piping shall be no greater than that necessary for twenty four (24) hours continuous operation.

(viii) Drainage from any fuel storage shall be in a direction away from the well.

Section 5. Illumination Requirements.

(a) For the purpose of these Rules and Regulations, all foot-candle power readings shall be taken 18 inches above all walking and working surfaces.

(b) Lighting around a derrick shall be sufficient to provide illumination at all times of:

(i) An average of five (5) footcandle power on the whole of the derrick floor, with no less than three (3) footcandle power at any point; and

(ii) A minimum of three (3) footcandle power at all other walking and working surfaces.

(NOTE: The above are minimum requirements, and many circumstances, including weather, may warrant higher lighting values.)

Section 6. Hoisting Lines, Wire Rope, Fiber Rope and Chains.

(a) Every hoisting line (wire rope) used in drilling operations shall have a minimum safety factor of three (3), determined as follows:

$$\text{Safety Factor} = \frac{B}{W}$$

Safety = B (Nominal breaking point of the wire rope in pounds)
Factor = W (Calculated total static load in pounds)

(i) A minimum safety factor of two (2) shall be permitted only in the following operations:

(A) On rotary drilling line when setting casing, or

(B) When pulling on stuck pipe and similar infrequent operations.

(b) All hoisting lines (wire ropes) shall be visually inspected daily by a drilling rig competent person ~~of the drilling rig daily~~, and shall be thoroughly inspected at least each thirty (30) days and documented. ~~The drilling line shall have a documented ton-mile program, and a record made of each inspection, which shall designate any defects noted.~~ The ton mile program is not applicable to CBMNG drilling rigs. However, the daily visual inspection and thirty (30) day documented inspections are required for all rigs. A record shall be made of each inspection with any defects noted. Such written reports must shall be kept on file at the drilling rig. Any deterioration noted as a result of the inspection shall be recorded and determination made as to whether the wire rope should be slipped or replaced. When the wire rope is slipped or replaced, it shall be recorded on the inspection report, as to date and length of wire rope removed. A hoisting line shall be removed from service when any of the following conditions exist:

(i) When three (3) broken wires are found in one lay of six (6) by six (6) wire line;

(ii) When six (6) broken wires are found in one lay of six (6) by nineteen (19) wire line;

(iii) When nine (9) broken wires are found in one lay of six (6) by thirty-seven (37) wire line;

(iv) When eight (8) broken wires are found in one lay of eight (8) by nineteen (19) wire line;

(v) When wire lines not described herein are found to have four (4) percent of the total number of wires composing such wire broken in one lay;

(vi) When marked corrosion appears;

- (vii) When corroded or broken wires at end connections are noted;
 - (viii) When end connections are corroded, cracked, bent, worn or improperly applied; or,
 - (ix) When evidence of kinking, crushing, cutting or unstranding are noted.
- (c) The wire rope (wire line) manufacturer's recommendations and/or a ton-mile cutoff program shall be utilized.
- (d) The dead end of the hoisting line (wire rope) shall be fastened securely to the drum.
- (e) The hoisting line (wire rope) shall not be removed from the drum until:
- (i) The traveling blocks are laid on the derrick floor, or
 - (ii) The traveling blocks are held suspended by a separate wire rope or chain of equivalent strength.
- (f) The hoisting line (wire rope) shall not be in direct contact with any derrick member, any stationary equipment or material in the derrick, except the crown block and any traveling block sheaves, a line spooler, a line stabilizer or weight indicator.
- (g) Every overhead sheave or pulley on which a line spooler counterweight rope runs shall be fastened securely to its support.
- (h) All wire rope shall be periodically inspected. A copy of the inspection reports of each running cable shall be maintained on the rig and readily accessible to the department.
- (i) "Periodically" means at least monthly.
 - (ii) Wire rope shall be removed from service when defects as shown at *Section 6. (b)(v) through (ix)* are detected.
- (i) Chains.

(i) The practice of placing bolts or nails between two links to shorten chains is prohibited.

(ii) Splicing or repairing broken chains shall be accomplished by use of repair devices approved by the chain manufacturer. The use of welding, brazing, bolts, wire, nails and other such methods or devices is prohibited.

(j) Winches and cables.

(i) Cable shall be in good repair. When respooling, care shall be used to avoid kinking. Cable clamps and thimbles, properly installed, shall be used in preference to knotting the cable.

(ii) Personnel shall not stand near, step over or go under a cable while it is under tension.

(k) Laying out and picking up cable.

(i) Winch operators feeding the cable in or out of the truck shall have the emergency horn in close reach. The cable shall not be guided or held while it is being fed into the line guide.

(ii) When cable handlers are required to stand on the platform of a moving vehicle, they shall face in the direction of travel and shall hold on to the vehicle with at least one hand.

(l) ~~(Reserved)~~ Tugger lines shall not be used to hoist personnel unless the manufacturer specifically allows the hoisting of personnel and specifies the use of a bosun's chair (boat-swan) and full body harness, or equivalent, that is attached to the tugger line.

(i) if there is no manufacturer's guidance on hoisting personnel, the tugger line with proper rating capacity may be used to reach an otherwise inaccessible location, if a bosun's chair (boat-swan) with full body harness is used, and the tugger line meets the following requirements:

(A) Self centering, that when released returns to the center position and has locking/braking capability.

(B) Control lever shall be attended at all times while lifting, stabilizing, or lowering of personnel.

(C) Lifting cable will be a minimum of 3/8-inch diameter, and all hoisting

equipment shall have a minimum workload of 4,000 pounds.

(D) All connections shall meet ANSI standards.

(m) Chain used in connection with drilling or production operations shall be suitable for the type of service. Chain used in a spinning line, in a tong line or on a cathead ~~must~~ shall be of an approved type. Certified-type chain, with individual lengths marked at intervals of five (5) feet or less by embossing or another approved method, may be used when purchased in bulk, provided the vender or the manufacturer has furnished the user with a proof-test record which includes all lengths in the entire length of chain pulled to approximately one-half (2) the breaking strength of the chain. All chain lines to tongs shall be three-eighths (3/8) inch or heavier, with an approximate breaking strength of 20,000 pounds or more.

(n) Each cathead using chain shall be equipped with a manually operated cathead clutch, or with another device adequate to keep the rotation of the cathead under control when it is in use. The clutch or device shall be the "non-grab" type and shall release automatically when not manually held in the engaged position.

(o) Every chain used in a spinning line shall have a fiber tail rope between eight (8) inches and twelve (12) inches in length fastened to the pipe end of the chain.

(p) Any chain shall be discarded or repaired if it has been stretched to the point where links bind, kink, lock, or it has been broken.

(q) No repair is permitted in a spinning chain.

(r) Connections. Connections between lengths of cathead chain, tong chains and spinning chain shall be of the connecting link or swivel type and of a strength equal to the lighter chain. Connecting links and swivels shall be of a size and type suitable for the chain in use.

(s) Fiber ropes cut, frayed (through one (1) or more lays) or that have been in contact with caustic acid or any other chemical that might weaken them, shall be replaced immediately.

Section 7. Equipment.

(a) Requirements:

(i) Traveling blocks shall be equipped with securely attached sheave guards.

(ii) Any slip hook used for lifting shall be equipped with a safety latch.

(iii) Every traveling block, hook, elevator, and elevator link or traveling equipment shall be reasonably free of projecting bolts, pins and parts.

(iv) A blunt, smooth-edged, anti-rope fouling device shall be installed on all manually operated rope catheads.

(v) The key seat and projecting key on a cathead shall be covered with a smooth thimble or plate.

(vi) The operator of a cathead shall keep his operating area clear at all times. That portion of the catline not being used shall be kept coiled or spooled.

(vii) When the cathead is unattended, no rope or line shall be left wrapped on or in contact with the cathead.

(viii) A qualified employee shall be at the controls while a cathead is in use. He shall stop the rotation of the cathead immediately in event of an emergency.

(ix) No splice shall be allowed to come into contact with the friction surface of the cathead.

(x) Each corner of a crown block shall be securely bolted or welded to the mast or derrick.

(xi) When bumper blocks are attached to the underside of the crown beams, a safety cable or strap shall be secured along their full length.

(xii) Each finger of a finger board shall be bolted or welded to its support beam.

(xiii) Any counterweight above the derrick floor, when not fully encased or running in permanent guides, shall be securely anchored to the derrick by a safety chain or wire rope safety line.

(xiv) Wire rope used to connect a tong to the counter weight shall be of a sufficient strength.

(xv) Every drilling rig shall be equipped with a reliable weight indicator.

(xvi) Any weight indicator hung above the floor shall be secured to the derrick by means of a wire rope, safety cable or chain.

(xvii) Every test plug used above the derrick floor shall be attached to the elevator links by safety cable or chain.

(xviii) The operator shall not leave the brake without tying the brake down or

securing it with an adequate counterbalance unless the drawworks are equipped with an automatic feed control. (See exception to this rule at *Chapter 5, Section 1.(a) (vii) (C)*)

(xix) The operator shall not engage the rotary clutch until the rotary table is clear of personnel and material.

(xx) The operator shall not leave the controls while the hoisting drum is in motion, except when drilling. (See exception to this rule at *Chapter 5, Section 1.(a) (vii) (C)*)

(xxi) Each rotary tong shall be securely attached to the derrick or a back-up post and shall have a minimum breaking strength at least equal to the breaking strength of the cable.

(xxii) Any wire rope connections used to attach safety cables to the derrick or back-up post shall have a minimum breaking strength at least equal to the breaking strength of the cable.

(xxiii) If lubrication fittings are not accessible with guards in place, machinery shall be stopped for oiling and greasing.

(xxiv) The drawworks shall not be operated without all guards in position and properly maintained.

(xxv) All air compressors shall have at least one (1) air pressure regulator to control proper air flow.

(xxvi) The safety relief valve (safety pop-off) on the main air tank shall be checked periodically and kept in proper working order.

(xxvii) All valves and pressure control devices shall be kept in proper working order.

(A) There shall be no valve in the discharge opening of a safety pressure relief device or in the discharge pipe connected thereto.

(B) The piping connected to the pressure side and discharge side of a safety relief device shall not be smaller than the normal pipe size openings of the said device.

(C) The piping on the discharge side of the safety relief device shall be securely tied down.

(D) The piping from the discharge side of the safety relief device shall be sloped in order to drain liquids.

(xxviii) Hydraulic pressure lines shall not be subjected to pressures exceeding those recommended by the manufacturer.

(xxix) The brakes, linkage and brake flanges of the drawworks shall be checked each day.

(xxx) A mud box or other effective means shall be provided on all rigs to convey any fluids away from the derrick floor, while pulling drill stem tests or breaking wet joints.

(xxxi) Hoses, lines or chains shall not be permitted to come into contact with the rotary table while it is in motion.

(xxxii) When visibility on the rig floor is obscured, no worker shall be required or permitted to work on the rig floor while the rotary table is in motion.

(xxxiii) ~~The safety buggy and escape line shall be checked by the derrickman prior to each trip.~~ [Reserved]

(xxxiv) A blunt smooth-edged divider to separate the first wrap of a line on a cathead shall be installed on all manually-operated rope catheads and the clearance between the device and the friction surface of the cathead shall not exceed one-fourth (1/4) inch .

(xxxv) The friction surface and flanges of a cathead on which a rope is manually operated shall be smooth and the diameter of the cathead between the flanges shall be uniform throughout its length with an allowable tolerance of three-eighths (3/8) inch.

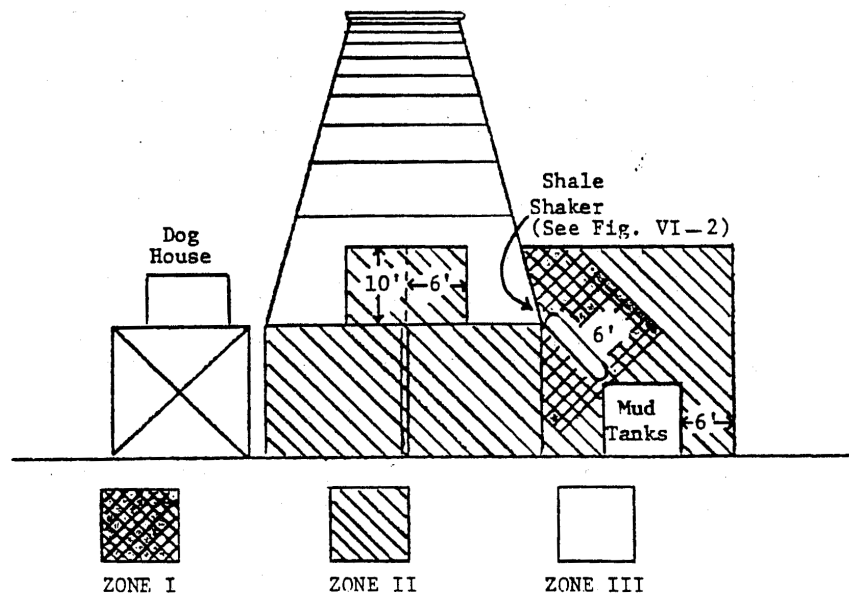
(xxxvi) Hydraulic tong control mechanism.

(A) The control device on power tongs shall be designed or guarded to prevent accidental activation.

(xxxvii) Pull-back post. A kelly pull-back post with attached snatch block to a sheave, roller or similar device (onto or through which is run the pull-back rope), shall be provided for pulling the kelly back to the rat hole. The pull-back post shall be secured either to the derrick foundation side sills or floor sills, and shall not be attached to or in contact with the derrick legs, girts, or braces.

(xxxviii) Whenever drill pipe, drill collars or tubing are racked in the derrick, provisions shall be made for the complete drainage of any fluids or gases in the stands.

FIGURE 6-1



Section 8. Area Classifications, Facilities and Electrical Equipment.

(a) Area Classifications. Areas on gas and oil drilling rigs are classified as Zones I, II and III. These zones classify the area of the facilities as well as the classification for electrical equipment.

(i) Zone I includes a radial distance within six (6) feet of the shale shaker.

(A) When the shale shaker is enclosed so as not to provide adequate ventilation, the area within the enclosure shall be classified as Zone I.

(ii) Zone II areas include:

well bore;

- (A) Areas within six (6) feet horizontally and ten (10) feet vertically of the

- (B) confined space under the drilling floor;

- (C) areas within six (6) feet of the mud tanks;

- (D) where the mud tanks are closed in with walls, the complete area of the enclosure.

(E) CBMNG Drilling Rigs will not operate their running lights, tail lights, or other lights while drilling the well. Once the well is capped with a wellhead, rig lights can be operated.

(iii) Zone III areas are those other areas of the well site not identified as Zones I or II above.

(b) Electrical Equipment.

(i) Zone I electrical equipment shall be as follows:

- (A) Motors - three-phase totally enclosed fan cooled (TEFC) induction-type or explosion-proof.

- (B) Flexible cords - type SO, ST, STO, Locomotive Cable, or equivalent.

- (C) Switches, circuit breakers, motor controllers and fuses - NEMA type 7-9 (explosion-proof).

- (D) Plugs and receptacles - totally enclosed, gasketed and with threaded hubs (commonly referred to as "vapor proof").

- (E) Lighting - not permitted within Zone I unless explosion-proof.

(ii) Zone II electrical equipment shall be as follows:

- (A) Motors - TEFC (totally enclosed, fan cooled) or equivalent.

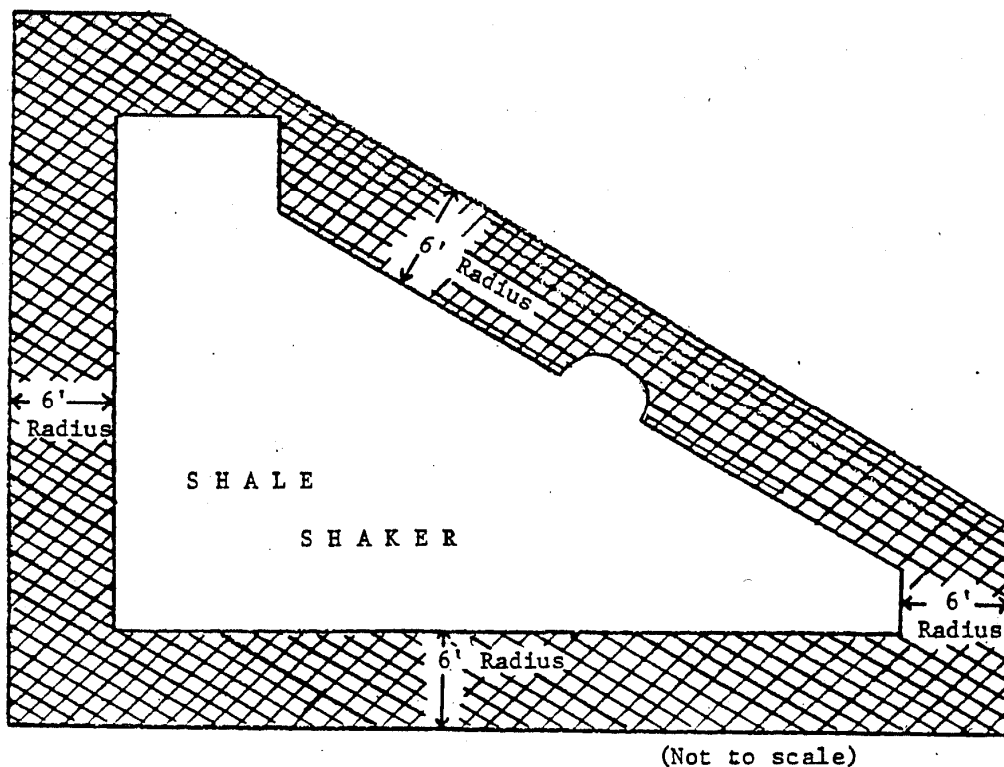
- (B) Flexible cords - type SO, ST, STO, Locomotive Cable, or equivalent.

- (C) All other electrical equipment - totally enclosed, gasketed and with threaded hubs (commonly referred to as "vapor-proof").

(iii) Zone III electrical equipment, wiring, fixtures and cords shall be installed and used in accordance with the *State of Wyoming Safety 1910 - General Rules and Regulations*, Subpart S.

(iv) Direct current (DC) rotary, drawworks and catworks shall have an enclosed cooling system or be purged with air from a safe source.

FIGURE 6-2



NOTE: When deciding whether to use "explosion-proof" or "TEFC" motors in Zone I, consideration shall be given to the greatest hazard. An explosion-proof piece of equipment will protect against explosion, but does not protect against electrical shock in a damp atmosphere. "TEFC" motors do not protect against explosion, but eliminate potential electrical shock in a damp or wet atmosphere.

(c) Facilities and Equipment.

(i) An exhaust pipe from any ground level internal combustion engine, located within seventy-five (75) feet of any well bore, process vessel, oil storage tank or other source of ignitable vapor, shall be so constructed that any emission of flame along its length or at its end is prevented.

(ii) All CBMNG drilling rigs and auxiliary equipment shall be equipped with an over rev device installed on the motor, and flame arrestors attached to exhaust.

~~(ii)~~ (iii) Burning stoves and open fires for heating purposes shall not be permitted within seventy five (75) feet of the well bore, unless a written hot work permit is implemented.

(iv) Welding, cutting, brazing or the use of an open flame or a non-explosion proof heater within seventy-five (75) feet of the well bore shall require a written hot work permit. The hot work permit must adequately address the requirements listed in (A), (B), and (C) below and be maintained at the job site while applicable work is in process.

(A) Pre-Work Stage Communication Meeting

- (1) Simultaneous operations.
- (2) Air/gas testing with LEL monitor
- (3) Equipment isolation
- (4) Equipment preparation
- (5) Identification of hazards
- (6) Emergency procedures

(B) Work-In-Progress Stage:

- (1) Air/gas testing with LEL monitor
- (2) Personal protective equipment requirements
- (3) Fire watch
- (4) Special procedures/precautions

(C) Return to Service Stage:

- (1) Authorization and turnover signatures
- (2) Posting of permit

(v) Each CBMNG drilling location shall have a Lower Explosive Limit monitor located at the equipment operator's control panel at all times. This monitor will measure the LEL and alarm at 10% of the LEL. The monitor shall be calibrated to the manufacturer's specifications.

~~(iii)~~ (vi) Generators, motors and lighting.

(A) Engine driven light plants shall be located at least seventy-five (75) feet from well bore unless properly protected to prevent source of ignition.

(B) Light plant generators shall have an adequate overload safety device.

(C) Vehicle lights shall not be used for lighting of rig operations in lieu of rig lights except in emergency.

(D) All light cords and plug-ins shall be kept in good condition.

(E) Rig lights shall be of an approved type for the area in which they are located. (See Section 8.(b).)

(F) Lamps and reflectors shall be cleaned frequently.

(G) The rays of the light shall be directed toward the objects to be illuminated, and away from the eyes of the workmen.

CHAPTER 7

OPERATIONS

Section 1. Raising or Lowering Derrick or Mast.

(a) A complete inspection of hoisting components shall be made by the tool pusher (or other qualified employee) before a derrick or mast is raised or lowered.

(b) The mast crown shall be equipped with sheave guards which shall prevent the hoisting lines from being displaced from the sheaves during operations or when being raised or lowered from the operating position.

(c) The tool pusher (or other qualified employee) shall be in charge and present during the operation of raising or lowering a derrick.

(d) No employee shall be under a derrick being raised or lowered.

(e) Truck-mounted derricks or masts shall not be moved while in a raised position. This does not apply to the skidding of a drilling rig.

Section 2. Anchoring and Guy Wires.

(a) Every rig shall be equipped with the number and size of guy wires as recommended by the manufacturer. In the case of truck or trailer mounted rigs where **no** manufacturer's recommendations are made, appropriate guy wires shall be used. **Exception: This rule does not apply when the manufacturer does not recommend the use of wind guys and the following conditions are met:**

(i) no one is in the mast during operation,

(ii) no drill pipe, casing, etc. is racked in the mast,

(iii) outriggers are utilized, and

(iv) the mast height is sixty (60) feet or less.

(b) Every guy wire recommended by the manufacturer shall be utilized according to the manufacturer's specifications.

(c) Where the number, size and utilization of guy wires are recommended by the derrick manufacturer, anchors shall be used to secure the guy wires, except when other means or methods of anchoring the guy wires are recommended by the manufacturer which are at least as effective as these Rules and Regulations.

(i) Expanding anchors, pipe anchors, concrete anchors, or other approved techniques shall be used, except that temporary, moveable, or driven stakes shall not be used.

(ii) Anchor placement and pull test.

(A) With respect to anchors installed, reinstalled or relocated on or before September 24, 1970 anchors shall be proof-tested along an angle that approximates the wind guys working plane within twelve (12) months prior to the use of the anchors. Such tests will be made at the poundage determined by the anchors location (per Figure 2a) within sector A, B, or C, and computed according to the appropriate sector curve on Figure I. If either of the two (2) front anchors falls in a sector which requires a higher test pull, both front anchors shall be tested as if they were located in the sector requiring the higher pull test. If ground is frozen at the time of the test and anchors are to be used again when the ground is not frozen, the anchors must be retested before use. If any anchor is more than three (3) feet above or below the well ground level, Figure 3 shall be used to determine the adjusted distance for which the pull test requirement will be established using Figure 2a. Anchors to be used for singles derricks only shall be proof tested to 10,000 pounds and ~~must~~ shall be located within sector A, B or C of Figure 2a.

(B) With respect to anchors installed, reinstalled or relocated from and after September 25, 1970, anchors shall be proof tested along an angle that approximates the wind-guys working plane within twelve (12) months prior to the use of the anchors. Such tests will be made at the poundage determined by the anchors location (per Figure 2b) within sector A, B or C, and computed according to the appropriate sector curve on Figure 1. If any anchor falls in a sector which requires a higher test pull, all four (4) anchors shall be tested as if they were located in the sector requiring the higher pull test. If ground is frozen at the time of the test and anchors are to be used again when the ground is not frozen, the anchors must be retested before use. If any anchor is more than three (3) feet above or below the well ground level, Figure 3 shall be used to determine the adjusted distance for which the pull test requirements will be established using Figure 1. Anchors to be used for singles derricks only shall be proof tested to 10,000 pounds and ~~must~~ shall be located within sector A, B or C of Figure 2b.

(iii) Each well site shall have available a such well site in an accessible weather-proof container an anchor record. Such anchor record shall state whether the anchor was installed prior or subsequent to September 24, 1970, the date of any relocation or reinstallation of any anchor at the well site after September 24, 1970, each anchors pull test (sector) from Figure 2a or 2b, and the date, amount of such pull test, and identification of the tester.

(A) Each anchor shall be pulled and held for a period of two (2) minutes after all movement (creep) has stopped.

(B) The anchor record shall state "FOR SINGLES DERRICKS ONLY" if the anchors are only tested to 10,000 pounds.

CLARIFICATION OF SECTIONS 2.(c) (ii) and 2.(c) (iii)

Individual anchors installed, reinstalled or relocated prior to September 25, 1970 will be tested in accordance with Section 2.(c) (ii) (A) and Figure 2a. Individual anchors installed, reinstalled or relocated September 25, 1970, or later, will be installed and tested in accordance with *Section 2.(c) (ii)(B)* and Figure 2b. This means that the installation of a single anchor subsequent to September 25, 1970, would not require the remaining anchors at the same well site to be tested and installed according to *Section 2.(c) (2)(B)* and Figure 2b, until such anchor(s) has been installed, reinstalled or relocated. If there is any doubt that individual anchors were installed before September 25, 1970, such anchor's record will indicate this information, and will be tested in accordance with *Section 2.(c)(ii)* Figure 2b.

(iv) No derrick shall be rigged up on a work site unless the anchors have been installed and tested in accordance with this subsection.

(v) All anchor testing units shall be certified by the **State of Wyoming** Workers' Safety and Compensation **OSHA** Division.

(vi) Guy wire anchors and drilling unit placement.

(A) Guy wire anchors shall be positioned in accordance with Figure 2a or 2b of this Chapter.

(B) The well operator shall provide a visible marker in such a position that a straight line through the marker and through the well head will form an angle with a line through any anchor and the well head which complies with the minimum angle requirements as follows:

*Minimum Angle Distances From Well Centerline				
Sector	Each Quadrant	Minimum Angle	Front & Rear	Sides
A	20°	35°	14	10
B	30°	30°	17	10
C	45°	22.5°	24	10

*In the use of Figure 2b, if any anchor in the pattern falls within Sector "C", the minimum angle on all anchors is 22.5°. One or more anchors located in Section "B", with the remaining anchors in Sector "A", requires the minimum angle to be 30° on all anchors. In the use of Figure 2a, the minimum angle of any anchor is 22.5°. A field determination of the minimum angle can be found by measuring these distances in convenient units such as feet, yards or paces in reference to the well centerline, the anchors and the longitudinal axis of the unit. (Example: With a single anchor in the pattern located in Sector "C", ~~one a person~~ could take twenty four (24) paces from the well head on an imaginary line which bisects the two (2) adjacent anchors between which the

unit will be placed. At this point there would be placed a marker or a stake. He would then take ten (10) paces to the left and turn so he was aligned with the well head. If anchors "A" and "C" (Diagram A) are "outside" his alignment, these anchors would be satisfactory. Going back to the center marker, he would repeat this procedure to the right. If anchors "B" and "D" are outside his alignment, the center marker is satisfactory. If alignment to either the left or right was not satisfactory, the center marker or stake would be moved to the left or right as needed and the alignment rechecked until the center marker is located properly.)

(I) The visible marker shall be placed on a direct line from the well head which passes through the center marker at least 100 feet from the head.

(C) The drilling unit operator shall center his unit in line with the marker and the well head.

(D) Where there is provided a readily visible and clearly defined pad for the positioning of the unit which will maintain the required minimum angle from the longitudinal axis of the unit and well to any anchor, the use of the marker in *Section 2.(c) (vi)(A)* of this Chapter is optional.

(vii) Guy wires shall not be any closer than ten (10) feet from power lines, and in no case shall a guy wire be extended above or below a power line.

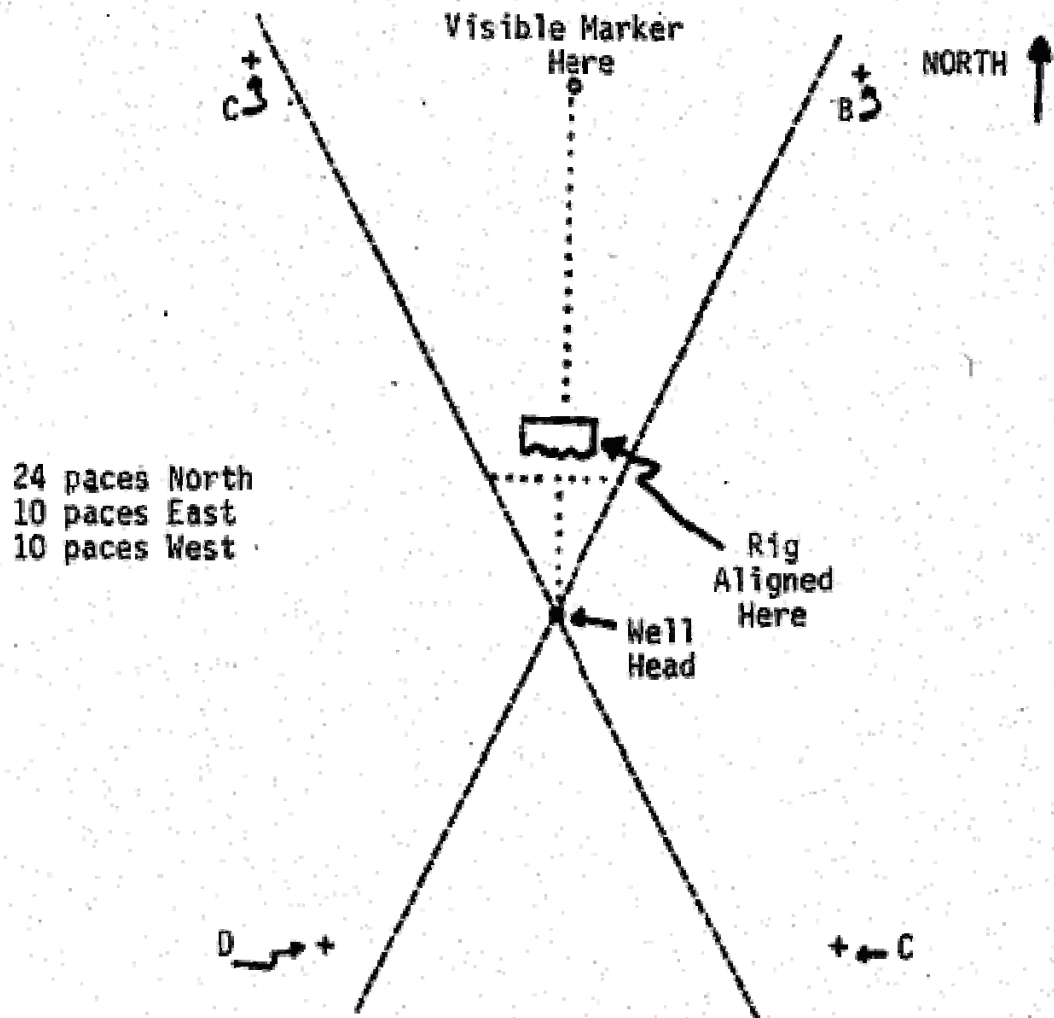
(viii) Installation, testing and maintenance of guy wire anchors shall be the responsibility of the party issuing the contract for the drilling.

(ix) All chains, boomers, clamps and tensioning devices that will remain in the working guy line ~~must~~ shall have as much strength as the guy line. Those chains, boomers, clamps and tensioning devices not of sufficient strength shall be bypassed by continuing the guy line through or around the anchor, then back to the guy line again. The guy line shall be properly secured with at least three (3) U-bolt clamps of proper size, or their equivalent.

(A) A fairlead (sheave) may be attached to the eye of the anchor and used to pass the wind guy back to itself.

(x) A thorough inspection of all guy wires in use shall be made at least once a year and shall be visually inspected prior to each rig-up, and a full written, dated and signed report of the guy lines' conditions kept at the rig where readily available for inspection by department personnel. All inspections shall be performed by a competent person authorized by the employer to perform such inspection. Defects such as those specified in *Chapter 5, Section 6.(b)(i) through (ix)* of these rules and regulations shall require the guy line(s) to be removed from service.

Diagram "A"

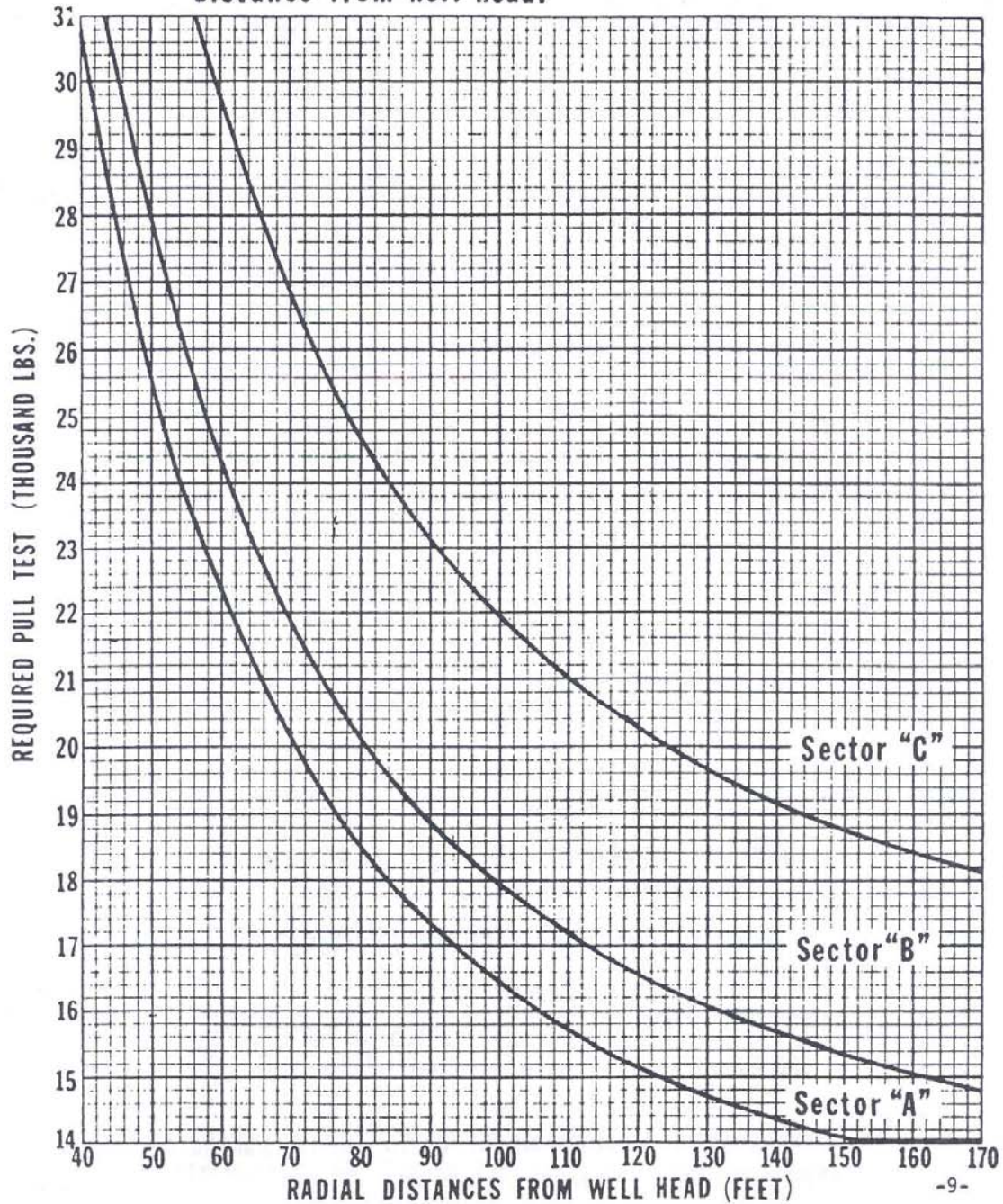


(Note: Directions shown are for this example only and do not require all units to be placed in a North/South position)

FIGURE 1

Pull Test requirements for anchors in areas "A" "B" and "C" from Figures 5a and 5b.

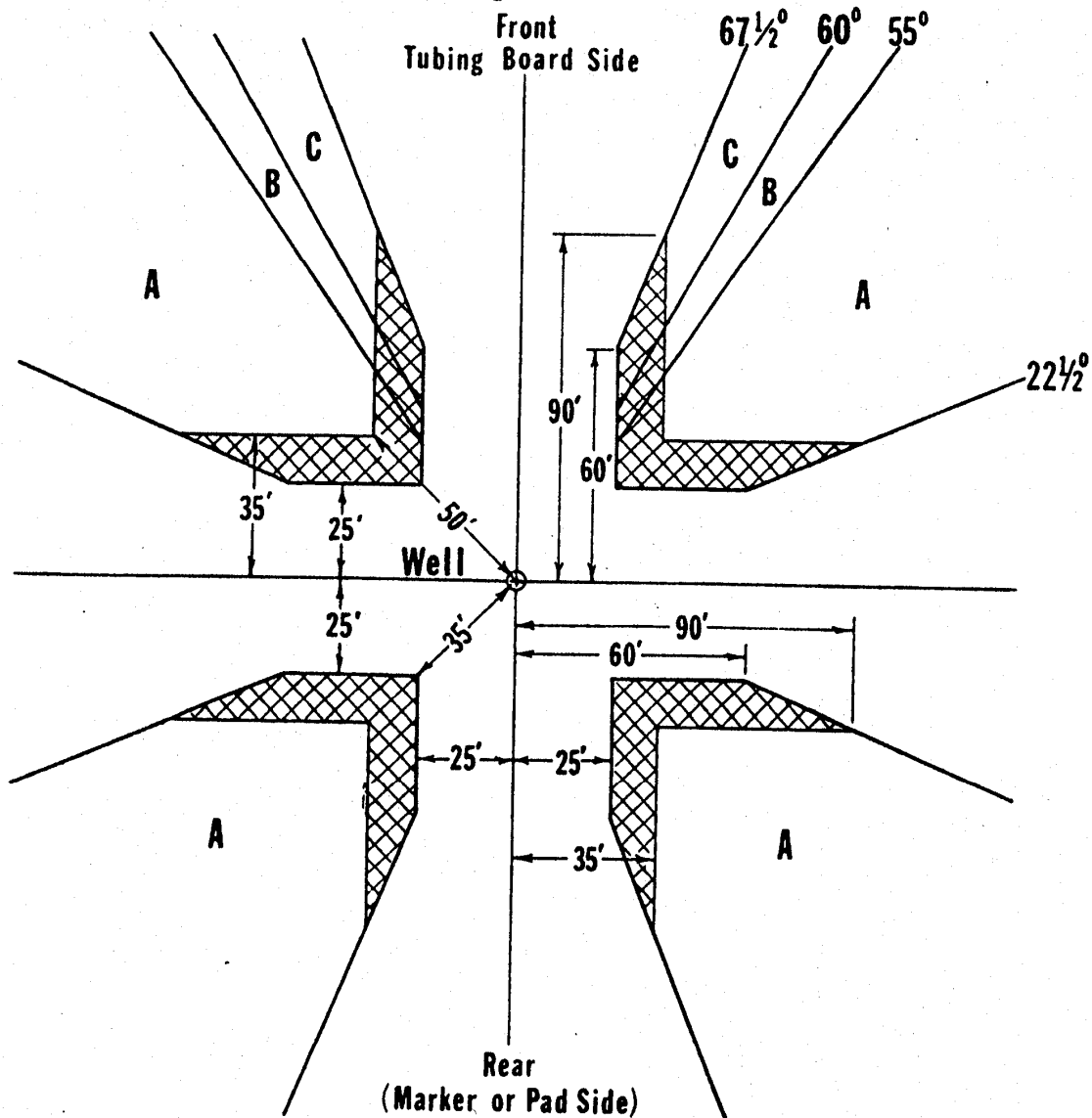
Pull Test shall be in one foot increments of radial distance from well head.



ANCHOR ELEVATION ABOVE OR BELOW WELL GROUND ELEVATION- FEET



Figure 2a



Wind Guyline Anchor Pattern

Anchors Installed Before 9-24-1970

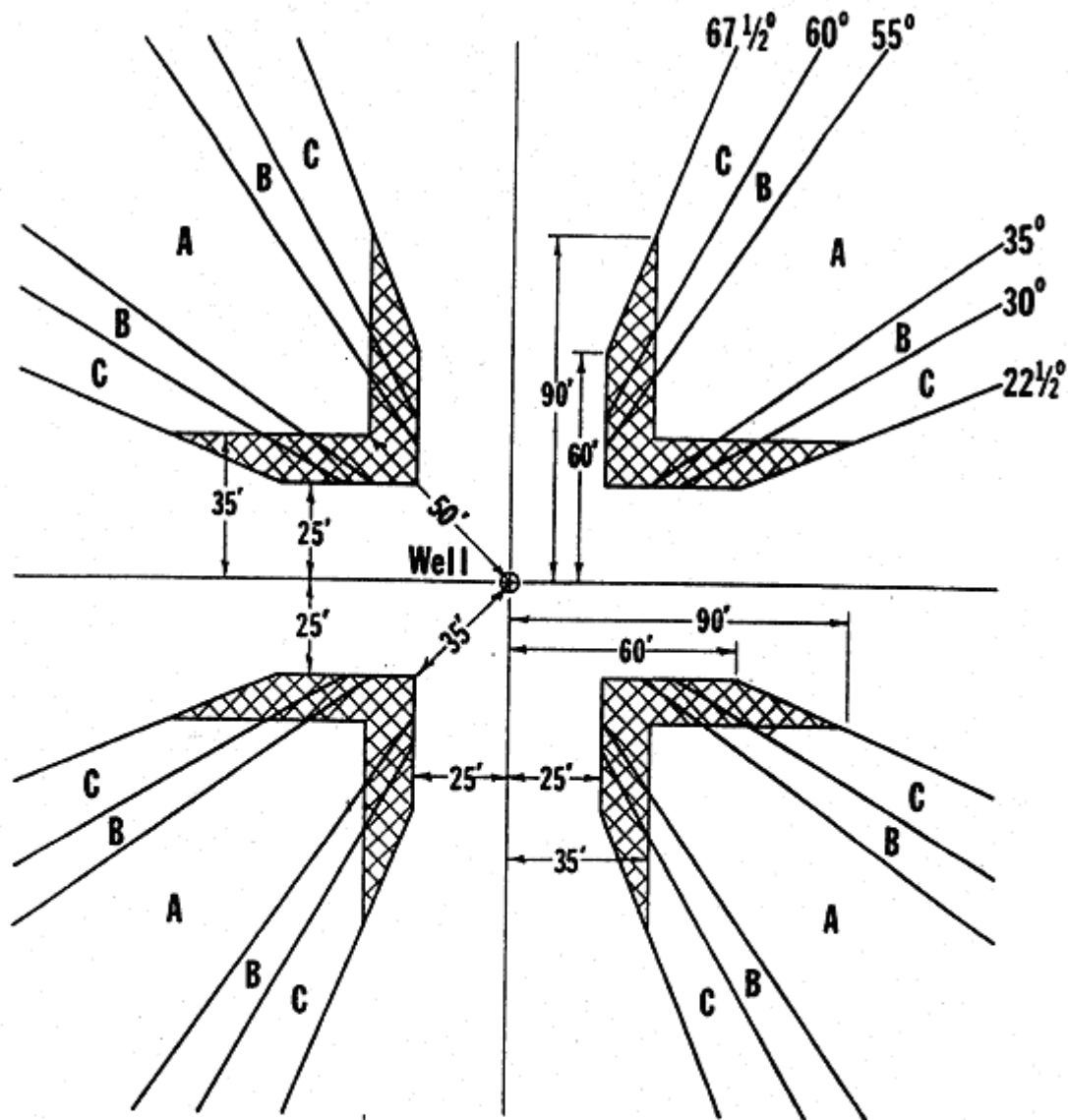
For Singles and Doubles Derricks

Singles Only 

Anchors must be located in areas labeled "A", "B" or "C".
10,000 pound pull test is required for "Singles" derricks
in "A", "B" or "C."

NOTE: Anchor pull test requirements for "Doubles" derricks are to be
determined from Figure 4a.

Figure 2b



Wind Guyline Anchor Pattern

Anchors Installed After 9-24-1970

For Singles and Doubles Derricks

Singles Only 

Anchors must be located in areas labeled "A", "B" or "C".
10,000 pound pull test is required for "Singles" derricks
in "A", "B" or "C".

NOTE: Anchor pull test requirements for "Doubles" derricks are to be
determined from Figure 4a.

ANCHOR ELEVATION ADJUSTMENT CHART

Directions for the use of Figure 3. After determining the elevation difference between the well bore ground level and the anchor ground level, find that difference on the chart at "Anchor Elevation Above or Below Well Ground Level". Follow that difference line horizontally until it meets the vertical line which represents the actual distance from the well head or bore to the anchor. Then follow the slanted line, either up or down as applicable, until "0" (Well Ground Level) is reached. Read vertically down and find the "Horizontal Distance From Well - Feet". This adjusted distance is then applied to Figure 1 to determine the required pull test according to the Sector in which the anchor is located. (Example: An anchor located ten (10) feet above well ground level 100 feet from the well head or well bore, using Figure 3, requires the same pull test as though it was 110 feet from the well head or well bore. An anchor fifteen (15) feet below well ground level eight (80) feet from the well head or well bore would require the same pull test as though the anchor was seventy (70) feet from the well head or well bore.)

Section 3. Blowout Equipment.

(a) Requirements.

(i) Blowout prevention equipment in all drilling operations shall be:

- (A) in accordance with recognized safe practice,**
- (B) reasonably adequate to keep the well under control at all times,**
- (C) inclusive of blowout preventers, choke and kill lines, as necessary,**
- (D) maintained in good working condition at all times.**

(ii) All blowout preventers, choke line and manifold shall be installed above ground level. Casing heads and optional spools may be installed below ground level provided they are visible and accessible.

(iii) All pipe fittings and valves placed on, or connected with a blowout preventer, well casing, casing head, or the drill pipe or tubing, shall be of a type suitable for the purpose for which they are to be used and adequate to withstand the pressure which may be encountered.

(iv) All ram type blowout preventers and related equipment, including casing, shall be tested to the full working pressure rating of said equipment upon installation, provided that components need not be tested to levels higher than the lowest working pressure rated component. Annular type blowout preventers shall be tested in conformance with the manufacturer's published recommendations. If, for any reason, a pressure seal in the assembly is disassembled, a test to a full working pressure rating of that seal shall be conducted prior to the

resumption of any drilling operation. In addition to the initial pressure tests, ram type preventers shall be checked for physical operation each trip and all components, again with exception of the annular type blowout preventer, tested monthly to at least fifty percent (50%) of the rated pressure of the blowout preventer equipment and/or to the maximum anticipated pressure of the blowout preventer equipment and/or to the maximum anticipated pressure to be contained at the surface, whichever is greater.

(v) The working pressure rating of all blowout preventers and related equipment shall equal or exceed the maximum anticipated pressure to be contained at the surface.

(vi) Studs on all well head and blowout preventer flanges shall be checked weekly for tightness. Where locking screws are provided on blowout preventers, hand wheels shall be kept installed and operational, and readily accessible. The entire blowout preventer and well head assembly shall be kept reasonably clean of mud and ice.

(vii) A drillstem safety valve shall be available on the rig floor at all times.

(viii) While a well is being drilled, tested, completed or reconditioned:

(A) The appropriate blowout equipment shall be mechanically tested periodically, and

(B) the blind rams shall be mechanically tested daily (provided that this requirement does not necessitate a special trip of the tools from the hole) and if found defective, any such equipment or rams shall be made serviceable before operations are resumed.

(ix) All tests shall be reported with full particulars on the daily drilling log book, and in the case of a pressure test, the pressure applied and the duration shall be recorded.

(x) One (1) or more employees employed on the rig shall have an adequate understanding of, and be able to operate, the blowout preventer system. At least one (1) person who is trained in blowout prevention and well control procedures shall be on the well site. Blowout preventer controls shall be readily accessible on the floor and/or at least 20 feet from the well bore and outside the substructure.

(xi) BOP equipment installed on wells in which formation pressures to be encountered are abnormal or unknown shall consist of a double-gate, hydraulically operated preventer with pipe and blind rams or two (2) single-ram type preventers, one (1) equipped with pipe rams, the other with blind rams and an annular type preventer. In addition, upper and lower kelly cocks, pit level indicators with alarms and/or flow sensors with alarms, and surface facilities to handle pressure kicks shall be installed prior to drilling any formation with known abnormal pressure. Accumulators shall maintain a pressure capacity reserve at all times to provide for operation of the hydraulic preventer and valves with no outside source. Areas in which abnormal pressures are likely to be encountered are those as defined by the Oil and Gas

Conservation Commission's staff and posted on a map to be available in the State Oil and Gas supervisor's office. This map, to be updated as information becomes available, will also segregate, vertically, formations where abnormal pressures are likely to be encountered.

(A) In all other drilling operations, BOP equipment shall consist of at least one double-gate preventer with pipe and blind rams or two (2) single-ram type preventers, one (1) equipped with pipe rams, the other with blind rams, and sufficient valving to permit fluid circulation at the surface, or shall be as approved by the State Oil and Gas Supervisor's Office and/or the U.S. Geological Survey District Engineer's Office, as filed on the drilling permit.

(B) Blowout preventer equipment and related casing heads and spools shall have a vertical bore no smaller than the inside diameter of the casing to which they are attached.

(b) CBMNG drilling shall require the use of well pressure control equipment specifically designed and manufactured for such use.

Section 4. Operational Specifics.

(a) Requirements.

(i) Spudding shall not commence until:

(A) all guards are in place on all equipment to be operated,

(B) all platforms, stairways and handrails are secured in position,

(C) the escape line with ~~buggy~~ emergency descent device is installed, and

(D) A-leg pins are inserted in their proper A-leg holes and secured by safety pins to prevent their displacement.

(ii) An escape line shall be a wire rope of suitable diameter and type. It shall be kept free of obstructions.

(A) The landing area must be clear of obstructions and hazards to permit safe landing of the user.

(iii) An approved ~~safety buggy with an adequate braking~~ emergency descent device shall be installed on the escape line and kept at the derrickman's working platform. The employer has until January 1, 2012 to replace their approved safety buggy with an adequate braking, to an approved emergency descent device.

(iv) The ~~safety buggy~~ emergency descent device and escape ~~(geronimo)~~ line shall be ~~checked~~ inspected by the derrickman prior to each trip.

(v) ~~Tension on the escape line shall be such that a 180 pound worker sitting in the safety buggy will touch the ground at least twenty (20) feet from the anchor.~~ The emergency descent device shall be installed per manufacturer's specifications.

(vi) ~~The minimum length of the escape line, which shall be securely anchored both at the ground and to the rig, shall be adequate to assure no less than 45° descent from the vertical plane.~~ The emergency descent device shall be installed and used by personnel trained in its correct application and use.

(vii) Every person, when engaged in work at ~~six (6)~~ four (4) feet or more above the derrick floor or other working surfaces, shall wear a full body harness with an attached safety line secured to a suitable anchor except where infeasible during rig up and rig down.

(A) Employer shall provide for prompt rescue of employees in the event of a fall.

(B) A written rescue plan shall be developed and kept on the rig.

(C) The employees shall be effectively trained on these rescue procedures.

(viii) Where these regulations prescribe the use of full body harnesses:

(A) The employee shall use an approved full body harness suitable for the particular job, be in good condition, and shall be provided by the employer;

(B) The full body harness shall be attached by means of a personal fall arrest system to a suitable anchor and adjusted to allow a minimum of drop no greater than six (6) feet;

(C) A separate life line shall be provided for each employee requiring a life line; and

(D) Full body harnesses and life lines shall be checked before each use, be maintained in good condition, and shall be repaired or replaced if found to be defective.

(ix) Every automatic cathead shall have a separate control. Where dual-purpose controls are used, a positive locking device shall be installed to prevent one automatic cathead from accidentally engaging while the other is in operation.

(x) Wherever practical, every drawworks master control shall be effectively

locked out when not in use.

(xi) Guards shall be installed so that controls may not be accidentally engaged through contact by catlines or other equipment.

(xii) The engine room, pump house, derrick floor and fourble board shall be enclosed to a sufficient height to provide protection against inclement weather.

(xiii) Exits shall be provided to the outside on at least three (3) sides of the derrick floor.

(xiv) The pump house shall have two (2) doors leading in different directions to the outside.

(xv) No exit door of a derrick, including all doors of the dog house, shall be held closed with a lock or outside latch while anyone is on the derrick floor.

(xvi) The suction pit or tanks used for the circulation of flammable materials shall not be located inside the pup house.

(xvii) No employee shall handle a traveling hoisting line unless he uses a suitable hand guard, which shall be secured to the derrick.

(xviii) No employee shall slide down any pipe, kelly hose, cable or rope line except in the event of an extreme emergency. No employee shall ride a traveling block except in an emergency. Anyone riding the traveling blocks shall wear an approved personal fall arrest system that is adjusted so as to allow the minimum fall distance possible.

(xix) No employee shall use the catline as a means of ascending to or descending from any point in the derrick except in an emergency. Even then the rotary table shall be locked out and qualified employees shall operate the cathead and controls.

(xx) When working on hydraulic tong heads, the input pressure line shall be disconnected.

(xxi) High pressure lines (hydraulic or air) shall have a safety pressure relief valve which shall never be set higher than manufacturer's specifications for the working pressure of the lines or valve.

(xxii) Hydraulic tongs shall be backed up with a safety device able to withstand the full torque of the power tool.

(xxiii) Auxiliary power tong units which employ internal combustion engines shall have the power unit placed seventy-five (75) feet upwind of the well bore, considering the

normal prevailing wind at the rig location, where location and terrain permit.

(xxiv) The rotary table shall not be used for the final making up or initial breaking out of a pipe connection.

(xxv) All pipe and drill collars racked in a derrick shall be secured with rope or otherwise adequately secured to prevent them from falling across the derrick.

(xxvi) Safety clamps, used on drill collars, flush joint pipe, or similar equipment for the purpose of preventing its falling in the well when not held by the elevator, shall be removed from the drill collars, pipe, or similar equipment before being hoisted up into the derrick.

(xxvii) Racking foundations shall be designed to withstand the load of racked pipe and drill collars and be secured to prevent turnover.

Section 5. Mud Pits and Tanks.

(a) Requirements.

(i) Portable tanks shall be located where it is not possible for employees or equipment to come into contact with overhead power lines.

(ii) All discharge lines shall be properly secured.

(iii) No employee shall jump from one tank top to another.

(iv) All fixed mud guns used for jetting, shall be pinned or hobbled when unattended.

(v) Hoses used for jetting operations shall be manned and an employee stationed at the pump control to shut down the pressure in the event of an emergency.

(vi) When necessary for an employee(s) to enter a mud tank which has contained toxic fluid, the Rules and Regulations as specified in *Chapter 4, Section 5.*, shall apply.

(vii) Standard railings shall be provided on the inside of all mud tank walkways. Where such walkways are four (4) feet or more above ground level, both sides shall be provided with standard railings.

Section 6. General Drilling Rules.

(a) Surface casing shall be run to reach a depth to prevent blowouts or uncontrolled wells. In areas where pressures and formations are unknown, surface casing shall be of

sufficient size to permit the use of an intermediate string, or strings of casing. Surface casing shall be set in or through an impervious formation and shall be cemented by the pump and plug or displacement or other approved method with sufficient cement to fill annulus to the top of the hole. If cement is not circulated to surface during the primary operation, supplemental cemented operations shall be performed to assure that the annular space from the casing shoe to the surface is filled with cement.

(b) The cemented casing string shall stand under pressure until the cement has reached a compressive strength of 300 pounds per square inch: providing, however, that no further operation shall be commenced until the cement has been in place for at least eight (8) hours. The term "under pressure" as used herein shall be complied with if one (1) float valve is used or if pressure is otherwise held.

(c) Setting depths of all casing strings shall be determined by taking into account formation fracture gradients and the maximum anticipated pressure to be maintained within the well bore.

(d) If and when it becomes necessary to run a production string, such string shall be cemented by the pump and plug method and shall be properly tested by the pressure method before cement plugs are drilled.

(e) ~~Natural gas which may be encountered in a substantial quantity in any section of a cable tool drilled hole above the ultimate objective shall be shut off with reasonable diligence either by mudding or casing, or other approved method and confined to its original source. Any gas escaping from the well during drilling operations shall be, as far as practicable, conducted to a safe distance from the well site and burned in accord with the Rules and Regulations of the Department of Environmental Quality of the State of Wyoming, or otherwise safely disposed of.~~

(i) CBMNG drilling operations shall divert gas and fluids through an approved flowline into the mud pit at a minimum of thirty (30) feet from the well bore. The flowline shall be made of six (6) inch diameter schedule twenty (20) line pipe or equivalent, and securely anchored and bonded.

Section 7. Smoking

(a) Smoking shall be prohibited on or under any part of the drilling rig within seventy five (75) feet of the well bore or within seventy five (75) feet of operations that constitute a fire hazard. Smoking shall be permitted only in areas designated for smoking.

(b) Designated smoking areas shall be conspicuously designed and identified.

(c) Matches and all smoking materials shall be left in a designated smoking area, so as to prevent anyone from inadvertently smoking.

CHAPTER 8

SPECIAL SERVICES AND OPERATIONS

Section 1. Safety Procedures for Special Services and Operations.

(a) General Requirements.

(i) Fire extinguishers provided by special services employers shall be placed in an accessible position.

(ii) There shall be a minimum number of employees in the derrick or within six (6) feet of the well bore during the time a swab line or other wire line is being run in the hole.

(iii) A frozen flow line or hose shall not knowingly be flexed or hit.

(iv) Line wipers shall be adequately secured.

(v) Oil savers should not be adjusted while the line is in motion except by remote means.

(vi) Only a qualified person shall operate the cathead.

(vii) All discharge lines shall be laid with sufficient flexible joints, preventing rigidity so as to eliminate excess vibration at the well bore.

(viii) All valves and gauges shall be checked to be sure there is no pressure on the lubricator before working on or removing it. Prior to breaking out (rigging down), all pressure shall be bled off the lines that are to be broken out.

(ix) Prior to and during loosening a connection that has been pressurized and bled, checks shall be made for trapped pressure before disassembly.

(x) Lubricators, swages, and unions shall be visually checked for unsafe conditions prior to installation. Any defects adversely affecting safe operations, such as but not limited to cuts, corrosion and thread damage, shall be corrected prior to installation.

(xi) A lubricator or other adequate control devices shall be used to allow the removal of the downhole tool under controlled conditions.

(xii) Hammering shall not be permitted on the lubricator or a connection when it is subjected to pressure.

(xiii) The supervisor of the special service shall hold a pre-job meeting to review responsibilities for the operation to be performed.

(xiv) Precautions shall be taken to prevent personnel or vehicles from crossing

under or over unprotected wire lines, pressurized hoses, or pipe.

(xv) Smoking or open fires shall be permitted only in designated areas.

(xvi) Tanks for flammable materials (except rig fuel tanks) shall be set a distance far enough away from the well bore to allow a minimum distance of seventy-five (75) feet from well bore and from equipment.

(xvii) Tanks for flammable materials shall be set so that if the tanks leak or rupture the flammable materials will drain away from the well and equipment by the use of ditches or dikes or their equivalent.

(xviii) Signals between supervisors, employees, or other persons involved shall be agreed upon prior to start of operations.

(xix) All discharge lines (pressure lines) shall be placed so as not to be under any mobile equipment nor shall any mobile equipment be placed over any such lines.

(xx) Any high pressure flow line or hose (in excess of 100 pounds pressure) shall be tied down securely to prevent whipping.

(xxi) When using an open ended flow line to flow or bleed off a well, it shall be secured at the end of the flow line and at each thirty (30) foot interval before opening the flow line.

(xxii) Tubing pulled from wells shall not be used for pressure lines, unless it has been checked and found to be satisfactory for the intended use.

(xxiii) Only necessary personnel shall be permitted near the pressurized lubricator, flow lines and well bore.

(xxiv) All well head adapters, wire line valves and lubricating equipment shall be of such design strength and material to withstand the maximum surface pressure of the well and the lateral movement of the lubricator.

(xxv) All applicable requirements of other sections of these rules and regulations, in addition to those found within this section, shall apply to special services and operations.

Section 2. Safety Procedures for Drill Stem Tests.

(a) Initial opening of drill stem test tools shall be restricted to daylight hours only.

(b) Fire extinguishers shall be checked to assure operational readiness before drill stem

test tools are started in the hole.

(c) Blowout preventers, kill-line and fill-up line shall be checked to ensure that all such equipment is in proper working condition before drill stem test tools are started in the hole.

(i) Fill-up lines shall be installed to keep the casing full of drilling fluid. Separate provisions for kill lines shall be made.

(d) Test line and valves shall be checked, and the test line shall be securely anchored at each end and at each 30 foot interval.

(e) The derrickman shall ~~check~~ inspect the escape line, ~~safety buggy~~ emergency decent device and slide for accessibility of emergency use.

(f) The mud box shall be hooked up and ready for use before the drill stem test tool is hoisted.

(g) Fluid recovered from the mud box shall flow to circulating tanks or to a reserve pit.

(h) Smoking or open fires shall be permitted only in designated areas no less than seventy-five (75) feet from the well bore.

(i) Wet plugs shall be used well in advance of reaching influxing fluids when drill stem tests are pulled.

(j) When taking a drill stem test, and hydrocarbons appear at the surface, it shall be mandatory that such hydrocarbons are reversed out before coming out of the hole.

(k) Drill stem tests shall not be taken in known or expected zones containing H₂S with tubular goods of strengths greater than grade X-95 drill pipe.

(i) A controlled environment shall be required if strength greater than Grade "E" is used. The drilling environment shall be controlled by maintenance of drilling fluid hydrostatic head and by the use of one or more of the following:

(A) Maintain a mud two (2) pH greater than or equal to ten (10), or

(B) Use chemical sulfide scavengers and/or inhibitors or

(C) Use a drilling fluid in which oil is the continuous phase.

(ii) Limit drill stem testing in sour environments to as brief a period as possible, using operating procedures that will minimize exposure to sulfide stress cracking conditions.

(iii) All drill stem tests in known or expected zones containing H₂S shall be reversed out (in daylight has only) before coming out of the hole.

(l) Rig engine exhaust emissions shall be adequately cooled before being released to the atmosphere.

(m) The well bore shall be kept full of drilling fluids at all times.

(n) Adequate measures shall be taken to prevent unauthorized personnel in the area.

(o) Every rig shall be equipped with a safety valve with connections for each type of tool joint being used.

(p) Drilling fluids shall be conditioned prior to running the test to minimize the possibility of blowout.

(q) Every test plug used above the derrick floor shall be attached to the elevator links by double safety cables or chains.

(r) A reversing valve shall be included in the test tool assembly in order to be able to reverse.

(s) The kelly hose shall not be used as a part of the test line.

(t) All spark producing equipment in the dog house shall be disconnected until the test is concluded.

Section 3. Flare Pits and Flare Lines.

(a) When lighting a flare pit the lighting shall be done from the upwind side. When there is no wind or when the wind direction is uncertain, no attempt shall be made to light the pit unless the operator can position himself in an explosive-free area. The use of hand thrown rags or similar flaming objects is prohibited.

Section 4. Safety Procedures for Air and Gas B Drilling.

(a) Specific Requirements.

(i) Drilling compressors (air or gas) shall be located at least 125 feet from the well bore and in a direction away from the discharge or blooie line.

(ii) The air or gas discharge line (blooie line) shall be laid in as nearly a straight line as possible from the well bore. It must be at least 150 feet in length. This discharge line shall be securely coupled and anchored to prevent movement. It should be laid into a discharge

pit in such direction from the well bore as to allow prevailing winds to carry produced or circulated gas away from the rig.

(iii) A pilot flame shall be maintained at the end of the discharge line at all times when air, gas or mist drilling is in progress.

(iv) All combustible material shall be kept at least 100 feet away from the discharge line and pit.

(v) The air line from the compressors to the standpipe shall be of adequate strength to withstand at least the maximum discharge pressure of the compressors used, and shall be checked daily by the compressor operator for any evidence of damage or weakness.

(vi) All cars, trucks, house trailers, etc., shall be parked at least seventy-five (75) feet from the well bore, except when delivering equipment or supplies.

(vii) Smoking will not be allowed within seventy-five (75) feet of the drilling rig while drilling with gas.

(viii) A meeting with each crew, including all supervisory personnel, shall be held prior to drilling with gas or air. The rules contained herein shall be explained.

(ix) One (1) or more employees on site shall be shown and taught how to use the emergency shut-off equipment during gas drilling.

(x) One (1) or more employees on site shall be shown and taught how to use control units to the blowout preventer and all fire fighting equipment.

(xi) All pipe connections carrying gas or air to or from the well bore shall be made up tightly. All lines and connections shall be frequently checked for leaks.

(xii) In the case of gas drilling, a shut-off valve shall be installed on the main feeder line at least 150 feet from well bore. In the case of air drilling, the shut-off valve shall be in the main feeder line located near the compressors.

(xiii) When making a connection, the standpipe valve shall be closed and the bleed off line shall be open before breaking tool joint.

(xiv) Compressors shall have such safety features as safety pressure relief valves, pressure gauges, engine governors, and fuel shut-off valves.

(xv) Equipment and materials for killing the well with mud should be on hand and operable before drilling commences.

(xvi) One (1) Class B-C fire extinguisher of at least 150 pounds dry chemical capacity or equivalent, shall be stationed on the job site in addition to the four (4) fire extinguishers as required in *Chapter 3, Section 4.d.(9)* of these rules.

(b) Eliminating sources of ignition.

(i) Unauthorized persons shall be excluded from the location or within the danger zone.

(ii) Rig engine exhausts shall be adequately cooled before being released to the atmosphere.

(iii) All spark producing equipment in the dog house shall be disconnected during a gas drilling operation.

Section 5. Cementing.

(a) Specific requirements.

(i) A pressure test on pump discharge lines when squeeze cementing shall be made at 1,000 psi over the maximum pressure specified by customer for his well equipment.

(ii) All valves in discharge lines shall be checked to see that they are open before giving orders to pump.

(iii) During operations each employee designated to handle the pumping shall remain constantly at his designated position while the pump is in operation, unless relieved by an authorized employee as directed by the supervisor on that job.

(iv) Unauthorized persons shall remain at least seventy-five (75) from all pumping operations and pressure testing operations.

(v) Cementing pressure shall not exceed the equipment's maximum safe working pressure.

Section 6. Acidizing, Fracturing and Hot Oil Operations.

(a) Specific requirements

(i) A check valve shall be placed in the discharge line as near the well bore as possible.

(ii) All blending equipment used in fracturing operations with flammable and/or combustible fluids shall be grounded to a conductive rod driven into the ground and all sand hauling equipment unloading sand into blender hopper shall be "electrically bonded" to the blender.

(iii) All supercharged suction hoses shall be covered with hose covers to deflect fluids when pumping flammable and/or combustible fluids.

(iv) A pretreatment pressure test on pump discharge lines shall be made at 1,000 psi over the maximum expected treating pressure specified by the customer for his well equipment.

(v) All valves in discharge lines shall be checked to see that they are open before orders are given to pump.

(vi) During operations each employee designated to handle the pumping shall remain constantly at his designated position while the pump is in operation, unless relieved by an authorized employee as directed by the services supervisor on that job.

(vii) All acidizing, fracturing, and hot oil trucks and tanks shall be at least seventy-five (75) from the well bore.

(A) All special servicing equipment that could produce a source of ignition shall not be permitted within seventy-five (75) of any tank containing a flammable and/or combustible material.

(viii) Unauthorized persons shall remain at least seventy-five (75) from all pumping operations and pressure testing operations.

(ix) All flammable and/or combustible fluid spilled on location shall be covered with dirt before pumping operations start.

(x) The fire truck, when on location, shall be spotted upwind of the operation when possible.

(xi) Treating pressure shall not exceed equipment maximum safe working pressure.

(xii) If pumping a flammable and/or combustible fluid, all electrical or internal combustion equipment, and all fires, within seventy-five (75) of the well bore, not used for performance of the job, shall be shut down or off during treatment.

(xiii) Flammable and/or combustible fluids shall not be bled back into open measuring tanks on equipment designed for pumping.

(xiv) All spilled oil or acid shall be covered or properly disposed of after breakout with adequate precautions taken for personnel to prevent contact with such material.

Section 7. Safety Procedures for Fuel Tanks.

(a) Specific requirements.

(i) Except for the fuel in the tanks of the operating equipment, Class III liquids, and those with flashpoints higher than Class III liquids, no gasoline or other liquid fuel shall be stored within seventy-five (75) of a well bore.

(ii) Propane or butane tanks shall be placed parallel to any side of the rig.

(iii) Tanks shall be properly marked to indicate their contents.

(iv) Piping and/or tubing for fuel tanks shall be protected against damage from vehicles by elevation, burying or other effective means.

CHAPTER 9

HYDROGEN SULFIDE (H₂S) GAS

Section 1. Area Definitions.

- (a) No hazard area - any well which will not penetrate a known H₂S horizon.
- (b) Low hazard area - any well which will penetrate a formation containing H₂S with a known .35 psi/ft B.H. pressure gradient or less and/or in which the H₂S zone has been effectively sealed off by casing/ cementing and/or cementing method.
- (c) Medium hazard area - any well which will penetrate a formation containing H₂S not defined in subsections a. and b. of this section.
- (d) High hazard area - any operation expected to bring free H₂S gas to the surface; i.e., DST, production testing, etc.

Section 2. H₂S Safety Equipment and Procedures.

(a) The following safety equipment shall be provided and operational on site before the hole is 500 feet above any formation (as defined in Chapter 9, Section 1.) suspected and/or known to contain H₂S gas.

(i) No hazard area.

(A) No special H₂S equipment shall be required.

(ii) Low hazard area.

(A) Two (2) thirty (30) minute self-contained breathing apparatuses (SCBAs) for emergency use only.

(iii) Medium hazard area.

(A) Air masks with emergency escape cylinders for each employee.

(B) Two (2) thirty (30) minute self contained breathing apparatuses (SCBAs) for emergencies.

(C) Two (2) wind socks and streamers.

(D) Oxygen powered resuscitator with cylinder.

(E) Two (2) gas detectors (pump type).

(F) A separate warning system.

(iv) High hazard area.

(A) Manifold air masks with emergency escape cylinders for each employee.

(B) Two (2) thirty (30) minute self contained breathing apparatuses (SCBAs) for emergencies.

(C) Two (2) wind socks and streamers.

(D) Oxygen powered resuscitator with cylinder.

(E) Two (2) gas detectors (pump type).

(F) A separate warning system.

(b) No employee shall be permitted on location without H₂S safety training, except employees may be permitted on location for H₂S training purposes.

(c) Two (2) means of egress on each location in a high hazard area shall be provided.

(d) A means of communication or instruction for emergency procedures shall be established and maintained on location along with the names and telephone numbers of the person or persons to be informed in case of emergencies.

Section 3. Employee Instructions.

(a) Employees shall be instructed in the use of H₂S safety equipment to be provided on site.

(i) The instruction of personnel shall include, as a minimum, the following elements:

(A) The characteristics of H₂S and its hazards.

(B) Proper first-aid procedures to be used in a H₂S knock-down.

(C) Use of personal protective equipment.

(D) Use and operation of all H₂S monitoring systems.

(E) Corrective action and shutdown procedures.

(ii) H₂S safety instruction shall be given by a qualified person(s).

(iii) Signs shall be posted 500 feet from the location, when possible, on each road leading to the location warning of the hazard of H₂S.

(iv) All H₂S safety equipment shall be checked to assure readiness before each tour change.

CHAPTER 10

SAFETY PROCEDURES FOR BOILERS AND PRESSURE VESSELS

Section 1. Boilers.

(a) Portable boilers used for rig heating shall be constructed, installed, operated, inspected and repaired to conform to the *Engineering Standards of ASME Boiler and Pressure Vessel Code, Sections I and VII-1971*.

(b) All boilers, while in operation, shall be under the supervision of a competent crew member.

(c) If any defects are found in a boiler or appurtenant equipment, the equipment operator in charge shall be notified immediately by the boiler operator, and immediate corrective action taken.

(d) The safety pressure relief valve and discharge end of exhaust pipes leading from boilers shall be located or placed in such a way as to prevent discharge from being released to the atmosphere where injury to any person or property may result.

(e) Steam boilers shall be located at least 100 feet from the well bore. (They should be located on the prevailing upwind side of the rig.)

(f) Each boiler shall be equipped with safety pressure relief valves set at a pressure not to exceed the working pressure of the boiler.

(g) Fuel valves shall not be located in front of the fuel burner, thus reducing potential of a burn in case of a flashback.

(h) Ample lighting shall be provided so that water levels can be easily read.

(i) Boiler flues shall be kept reasonably clean at all times.

(j) Reclaimed water used in a boiler shall not be contaminated with crude or other oils.

(k) There shall be no valve at the discharge opening of a safety pressure relief valve or in the discharge pipe connected thereto.

(l) The safety pressure relief valve shall be connected as close to the boiler steam area as possible, with no valves and minimum piping between the safety pressure relief valve and boiler.

(m) The piping on the discharge side of the safety pressure relief valve shall be securely tied down and shall contain no valves.

Section 2. Safety Procedures for Air Compressors.

(a) Air compressors used or operated shall be constructed, installed, operated and repaired to conform to the Engineering Standards of ASME and ANSI.

(b) All air compressors, while in operation, shall be under the supervision of a competent crew member.

(c) If any defects are found in the air compressors, receiver tank and appurtenant equipment, the driller in charge shall be notified immediately by the crew member operator, and corrective measures immediately taken.

(d) The safety pressure relief valve and discharge end of exhaust pipes leading from air compressors shall be located or placed in such a way as to prevent discharge from being released to the atmosphere where injury to any person or property may result.

(e) Plugs and safety pressure relief valves shall be inspected at frequent intervals by the operator.

(f) Each air compressor shall be equipped with safety pressure relief valves set at a pressure not to exceed the working pressure of the receiver tank.

(g) Ample lighting shall be provided in front of the gauge panel, so that the gauges can be easily read.

(h) Fittings and pipe shall be properly installed and shall be capable of withstanding the discharge pressure of the compressor used.

(i) The fluids discharged from safety pressure relief valves and drain valves shall be piped to a place where they will not endanger employees.

(j) There shall be no valves in the discharge opening of a safety pressure relief valve or in the discharge pipe connected thereto.

(k) The piping connected to the pressure side and discharge side of a safety pressure relief valve shall not be smaller than the normal pipe size opening.

(l) All air compressors shall have at least one (1) air pressure regulator to control proper air flow.

Section 3. Safety Procedures for Safety Pressure Relief Valves, Pumps, Fittings, Piping, Hoses and Pressure Vessels.

(a) All pressure vessels, safety pressure relief valves, pumps, fittings, piping and hoses shall be constructed, installed, operated, inspected and repaired to conform to the Engineering Standards of ASME and ANSI.

(b) All positive displacement pumps associated with a drilling rig shall be equipped with a safety pressure relief valve and an operating gauge.

(c) The safety pressure relief valve shall be set to discharge at a pressure not in excess of the maximum allowable working pressure of the pump, pressure vessel, piping and fittings.

(d) A guard shall be placed around the shearing pin and spindle of a safety pressure relief valve.

(e) The emissions discharged from a safety pressure relief valve shall be piped to a place where they will not endanger employees.

(f) There shall be no valve between a pump and its safety pressure relief valve.

(g) There shall be no valve in the discharge opening of a safety pressure relief valve, nor in the discharge pipe connected thereto.

(h) The piping connected to the pressure side and discharge side of a safety pressure relief valve shall not be smaller than the normal pipe size opening of said valve.

(i) The piping on the discharge side of a safety pressure relief valve shall be properly secured.

(j) Valves of the quick-closing type shall not be used on the discharge line from a pump.

(k) Clamps and safety cables or chains shall be used to fasten the kelly hose at the standpipe end to the derrick and at the swivel end to the swivel housing.

(l) Discharge hoses under pressure shall be secured by clamps and safety cables or chains.

(m) Fittings, hoses, pumps, pressure vessels, piping and safety pressure relief valves shall be properly installed and shall be rated to coincide with the discharge pressure of the pressure producing source.

CHAPTER 11

ACQUISITION OF REFERENCED STANDARDS

Section 1. Standards Producing Organizations.

(a) The National Consensus Standards listed in Chapter 1 of these Rules and Regulations may be obtained from the organizations listed below:

(1) *American National Standards Institute (ANSI)*; 11 West 42nd Street; New York, NY 10036.

(2) *American Society of Mechanical Engineers (ASME)*; United Engineering Center; 345 East 47th Street; New York, NY 10017.

(3) *Society of Automotive Engineers, Inc. (SAE)*; 2 Pennsylvania Plaza; New York, NY 10101.

(4) *Institute of Makers of Explosives (IME)*; 420 Lexington Ave.; New York, NY 10017.

(5) *American Welding Society (AWS)*; 550 NW LeJuene Road, PO Box 351040, Miami, FL 33135.

(6) *National Fire Protection Association (NFPA)*; Batterymarch Park, Quincy, MA 02269.

Section 2. Source of Rules and Regulations.

(a) These Rules and Regulations have been compiled utilizing excerpts from and references to the following sources:

(1) *ANSI All. 1-1970 Practice for Industrial Lighting.*

(2) *ANSI B31.1.0-1967 Power Piping.*

(3) *ANSI C1 (Rev. 1971) National Electrical Code.*

(4) *AWS D1.0-66 Welding in Building Construction.*

(5) *ANSI Z21.30-1964 Installation of Gas Appliances and Gas Piping.*

(6) *ASME-Boiler and Pressure Vessel Code (1971).*

(7) *NFPA No. 30 (1972) Flammable and Combustible Liquids Code.*